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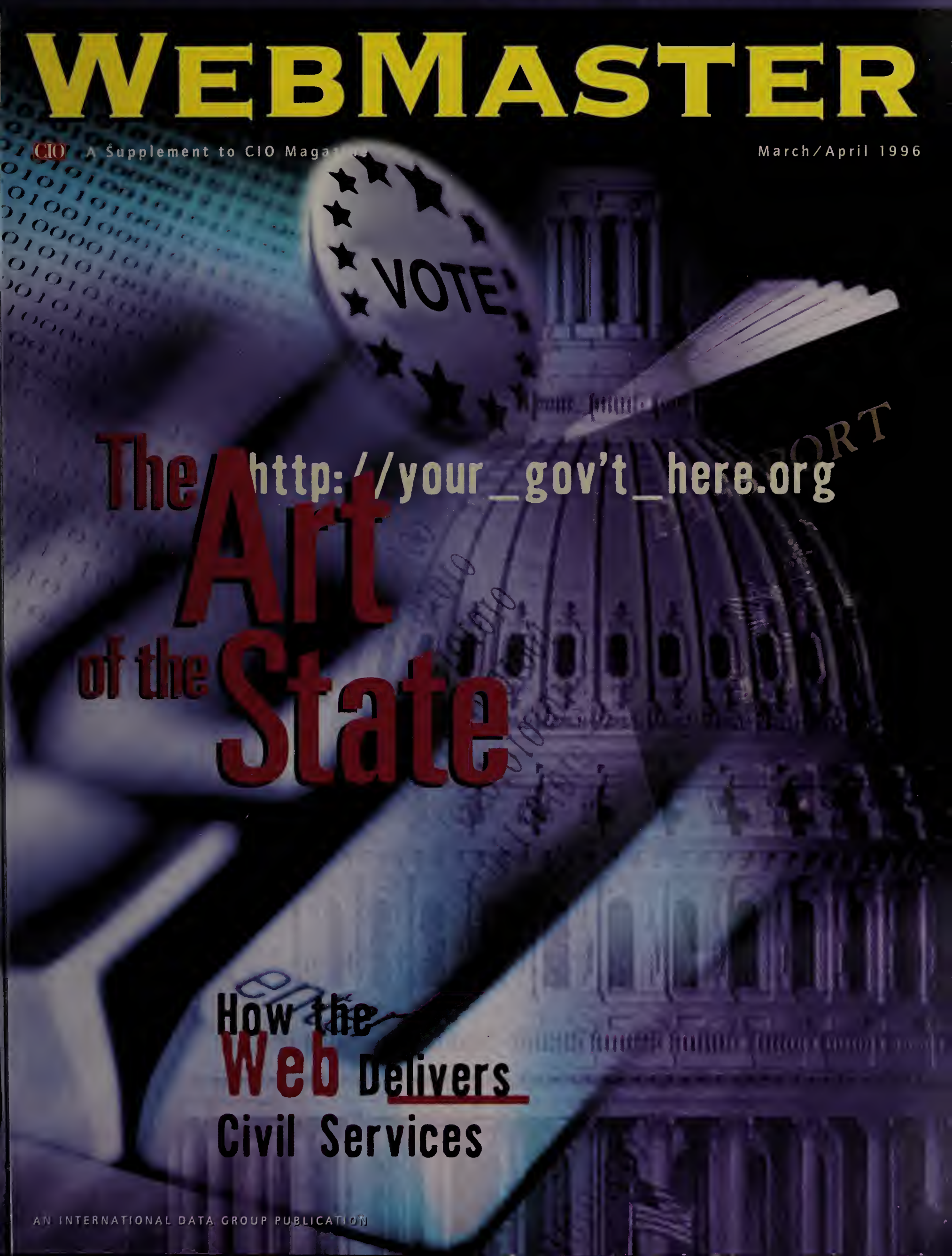
CIO A Supplement to CIO Magazine

March/April 1996



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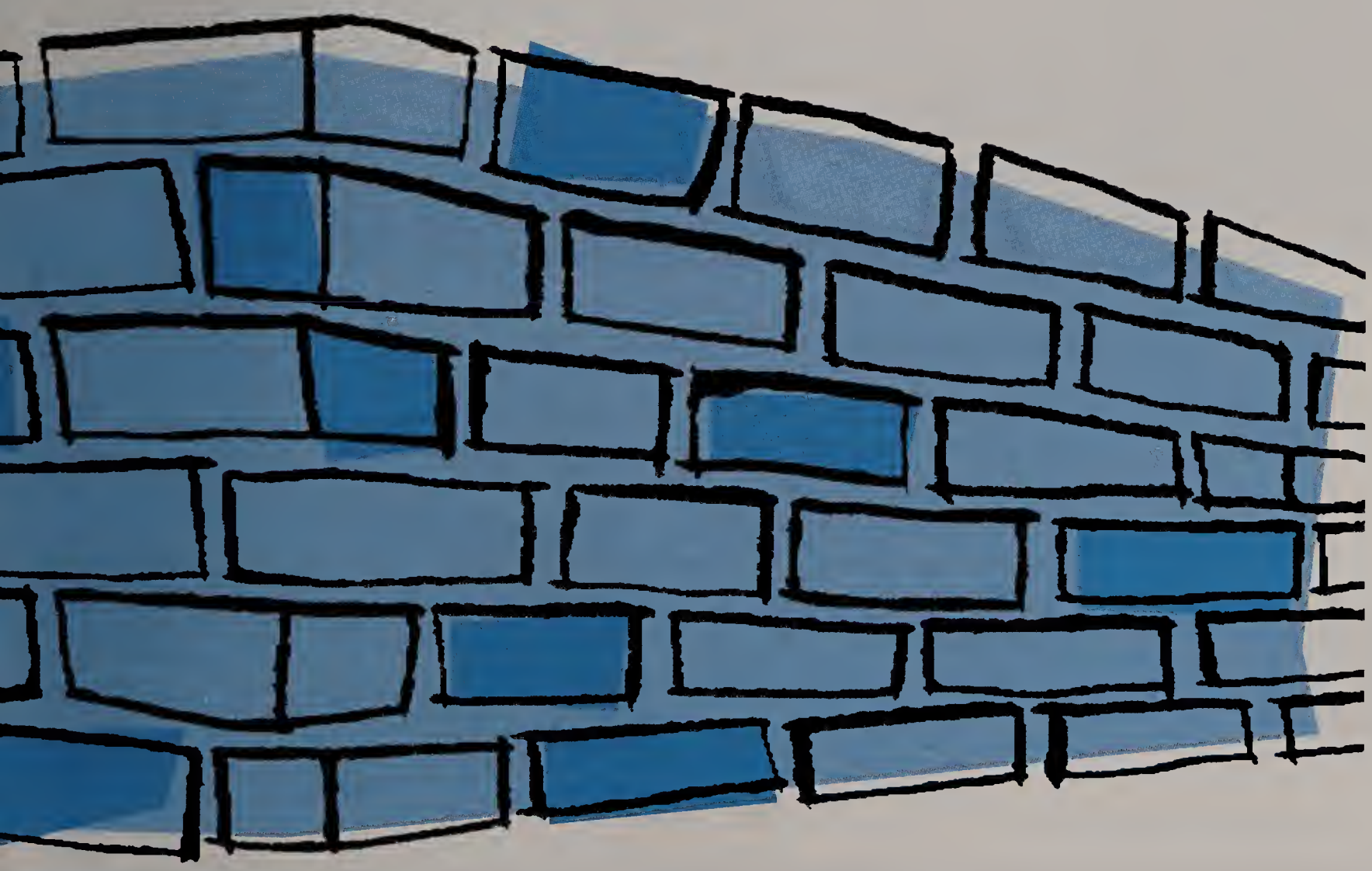

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Cover image by Ann Elliott Cutting

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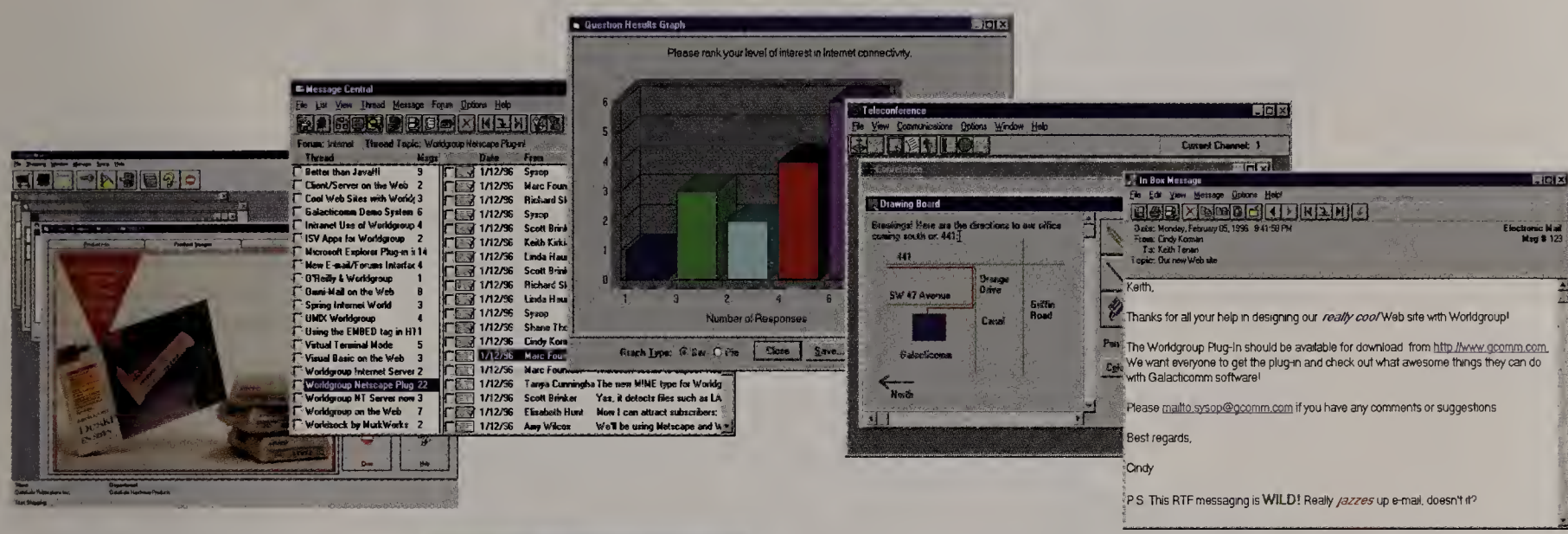

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Can You Cut It?

There's no delicate way to put this: A lot of people are betting that the IS profession is going to buy the farm over the Internet. An account supervisor at a big ad agency in New York recently summed up for me his dour expectations: "They'll do what they've always done. They'll get in the way. They'll slow things down. They'll try to exert too much control, which will piss off everybody in the user community" —with the result that those pissed-off users will execute the traditional end-run around IS—and produce a magnificent, opportunity-laden mess, which the vendors can milk indefinitely, inventing brand-new products and services to help clean things up. (I mean, do environmental engineering firms love toxic dumps, or what?) But will this be good for your average technology user organization? Not hardly.

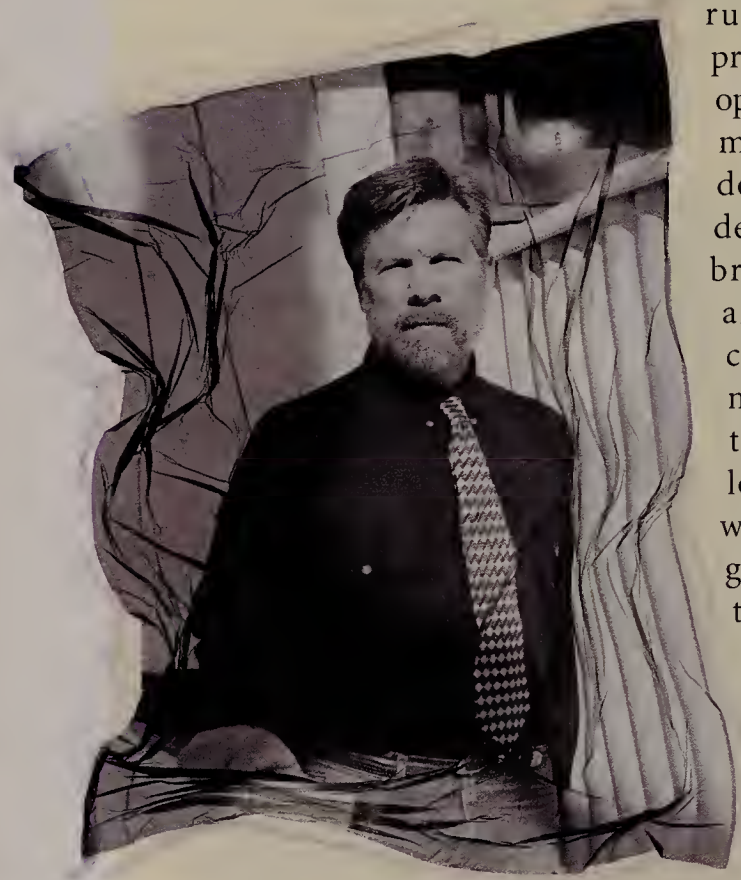

PHOTO BY JERRY MARGOLYCZ

It's been a long strange trip for the citizens of IS. They began professional life as Druids substantiated from the rough bark of Fortran and Cobol. They were archpriests possessing special knowledge and skills, a special language, special tools and a very special sanctuary in which to apply them. No one knew what they knew except for the other Druids. And so there was naturally an unbridgeable distance between them and the other, less exceptional, corporate citizens. Loyalty was to the work and not to the enterprise. It was even a point of pride among some Druids to assert that they knew little—and cared less—about the grubby business of the company in which they worked. What they knew about was code, and it hardly mattered whether they coded with expert elegance at an insurance company or an automaker or a textile mill.

This, then, was the wayward early anthropology of the IS culture. Its consequences rippled as the language of priestly hauteur was deconstructed and scandalously shared among the unworthy and unwashed. Technology escaped the domain of the priesthood; understanding of its power turned commonplace; unfamiliar types of low-level expertise became annoyingly widespread; and the points of connection to that power became prolific to the point of ratness. If you're an old-line, diehard IS guy, you pretty much want to gag.

But, hey, it's never too late to change. And lots of IS Druids eventually gave up their cowls and rituals and tried to play well (or at least better) with others. This was a bit of a stretch, both for the former Druids and for their new friends, the businesspeople, whose long memories retained the vivid imagery of various unpleasant human sacrifices. Fear and loathing persisted, and the journey to becoming a "new breed" of Druid had to be helped along with an odd mix of public relations, recalculated priorities and earnest, professional self-examination. Along came a bunch of new VP-level titles (culminating in the CIO designation), each with a much friendlier, more consultative and business-focused job description. Taken together, these reforms acknowledged changed realities (called "paradigms") and emphasized the kind of interpersonal conduct that would impress the average kindergarten teacher.

It's a Job-type situation.

Admittedly, the PC thing was tough; they turned out not to be inconsequential toys after all. What's worse, PCs were just the leading edge of a change wedge that keeps on coming. The ex-priests stand in awe of this juggernaut. They scamper after it, trying to catch up, promising to be good if only it will—please!—stop changing for just a precious 10 minutes so they can maybe catch their breath. It's a Job-type situation. Boils, crop failure, famine, pestilence, ruination. In just a couple of decades, really, the

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ex-priests have gone from having the resource buttoned up and nailed down to having it turn into the equivalent of an invisible odorless gas that travels everywhere and touches everyone. And still they have to *manage* it! Bummer.

And now there's this goddamned Internet, the ultimate, fully distributed threat to the well-known IS mania for control. But it may well be that the citizens of IS will recognize the binary importance of the moment: It's either a fresh opportunity for professional disgrace or a chance to become the heroes they always hoped to be.

The accumulated gunk of IS's corporate history makes the prospect of heroism difficult but certainly not impossible. The IS profession could—and should—rise to the occasion and offer important value to the colonization of the Net by business. Right now, there's a frightening lack of discipline afflicting many development initiatives, and that could land quite a few organizations in the soup. IS possesses insight, cross-functional experience (including some all-important scars) and a process-focused habit of mind that would be valuable assets to an effective Web development strategy. But it will need to convince the rest of the citizens it comes in peace and intends to help.

As one marketing-background webmaster told me recently, "We're joined at the hip with the IT people. It isn't easy, but we keep working on it, and I think we're making real headway."

Everyone should be so fortunate. How is it going at your place? Let me know at *mccreary@cio.com*.

Lew McCreary
Publisher & Editor in Chief

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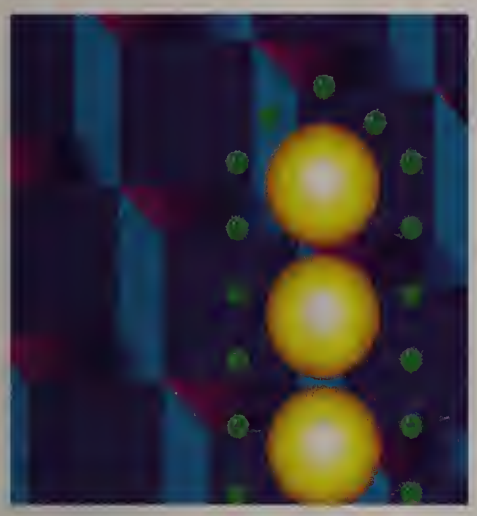

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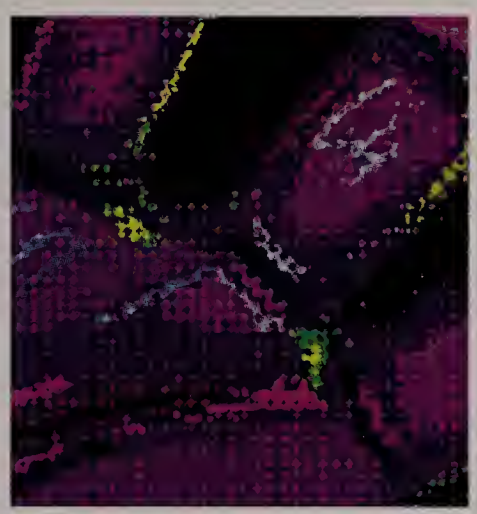

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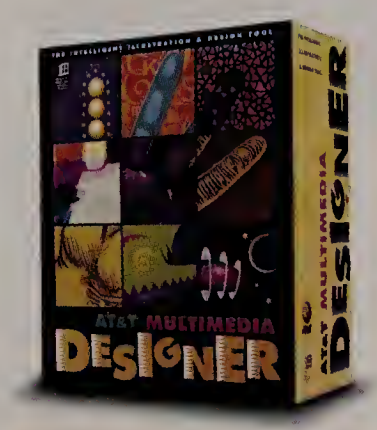

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threads

PROFILE

Diamond Lines

While many companies are still figuring out how to put up their literature racks in cyberspace, the jewelry trade is enjoying a gem of a service that replicates most of its business relationships on the Net. "This is a first. No one else has linked an industry with the Web," says Jacques Voorhees, president of Dillon, Colo.-based Polygon Network Inc., which operates the new service.

Industry sites that serve the public—buyers of insurance or electronics, for example—have been around for a while now. But Polygon Internet, which went live Nov. 20, 1995, serves everyone in the gem trade *except* the retail customer. And while some facets of the system need buffing, the important players from every sector are already on board, including diamond and colored-stone wholesalers, jewelry manufacturers, independent and chain retail jewelers, mass merchandisers, trade associations and publications, gem grading and appraising labs, and even pawn shops.

JACQUES VOORHEES: A multi-faceted site

Polygon is well-positioned to play trusted electronic intermediary for the trade, having provided some version of this service for the past 10 years. The initial network ran on dedicated leased lines that hard-wired subscribers' terminals to a mainframe. Later, the company switched to a bulletin board-style system that minimized telephone costs by requiring users to compose messages offline and dial in only to send and pick them up. That system, called Polygon Direct, will operate in tandem with Polygon Internet until the bulk of its 1,800 subscribers move to the new service.

Besides being cheaper to operate than its predecessor, Polygon Internet adds some real sparkle in terms of ease of use and features. By accessing a single home page *(http://polygon.net)* and entering a password, people in the business can see loose diamonds, bangles and baguettes being sought or offered for sale; declare their own trading interests; leave public or private messages for one another; read details of jewelry store robberies; check with labs on stone quality; and monitor news in their markets.

The Web version also makes more—and more detailed—information available, through graphics (hawkers can show 50K color JPEG images of their wares along with the usual text descriptions) and by directly linking information seekers and sources. For example, a database of wholesale diamonds for sale, updated daily, classifies stones by color, clarity, carat weight—all simple numbers—but also by the quality of the "make," or cut. The last is determined by 20 factors with picturesque names like "crown angle," "pavilion depth" and "girdle thickness." To get all that information, users can click on the "make" field and link to the lab that graded the stone.

Check out diamonds, bangles and baguettes for sale

Where the Web goes, growth is sure to follow. Voorhees expects that lower costs will enable Polygon to extend its reach considerably, particularly among the world's 100,000 retail jewelers—any of which could become Polygon customers. WM

ROGER L. KAY *is a freelance writer in Wayland, Mass. He can be reached at* RLKay@world.std.com.

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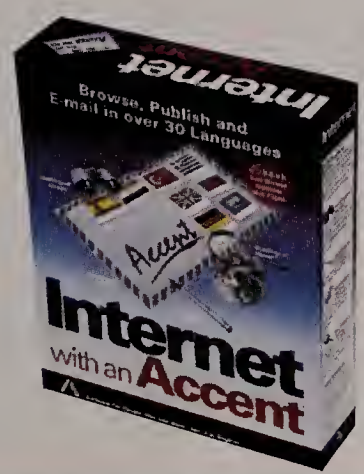

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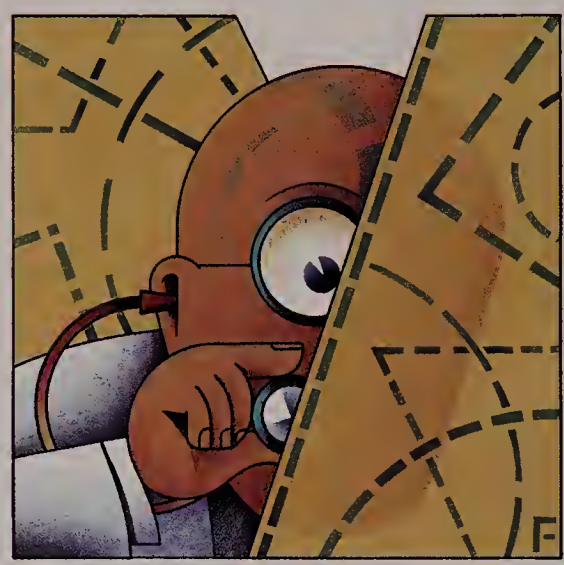
Webmaster's Notebook

Webmastery is a detail-oriented craft, and it is in the details, as we know, that the devil hangs his hat. Misaligned tables, overlapping elements, phantom links: These are the careless mistakes that drive surfers from even the most inspired Web sites.

Companies striving for perfect pages must implement a strict routine of hypertext hygiene, which is really nothing more complicated than checking your HTML for syntax errors and your links for viability. But what is normally a dull, time-consuming task can be zipped up considerably with the help of a handful of tools that are downloadable from the Net itself.



Just submit your code or URL to *http://www.unipress.com/weblint/*, for example, and the nice folks at UniPress Software Inc. will subject it to Weblint, a PERL script that—you guessed it—"picks up everything." Weblint will check your basic structure and scan for goofs, including incorrect or illegally nested elements, context errors and mismatched tags. It's particularly useful for detecting common mistakes that are hard to spot with the naked browser, such as errors in tables or unclosed elements. And all Weblint's creators want in return for this service is a trifling $10 ($25 for companies).

Even better is Doctor HTML *(http://imagiware.com/RxHTML.cgi)*, a free Web-site analysis program from Imagiware. To adopt the host's metaphor—which is only polite—webmasters enter their patients' URLs and indicate the tests they want performed. The good doctor checks for spelling errors, analyzes images (so you'll know how much bandwidth they consume and how long they'll take to load), tests the structures of documents, tables and forms and—here's where it earns the gold star—checks hyperlinks to make sure they're still valid.

If phantom links are your sole concern, Verify Web Links from Enterprise Integration Technologies Corp. makes an excellent ghostbuster. The software, downloadable from *http://wsk.eit.com/wsk/dist/doc/admin/webtest/verify_links.html*, starts from a given URL and follows the links outward—within the boundaries of a specified profile—searching for breaks or pages that are no more.

An alternate source for some information is a company's own error logs. These are often dismissed as poor relations to more-compelling activity logs: After all, wouldn't you rather read about the people who have been to your site than about the unpleasant surprises they encountered there? But overreliance on error logs has at least one serious drawback: Mistakes become apparent only after your visitors have already tripped over them. WM

Happy Tales

In *CyberMarketing Essentials for Success*, Craig Settles, of Successful Marketing Strategies, offers heartwarming tales of ROI achieved:

- Lotus Development Corp. can respond to 10 online customers in the time spent with one client on the phone.
- Sun Microsystems Inc. saves $250,000 per year by putting its quarterly reports online.
- Using its private CompuServe site, Amway Corp. reduced the time it takes a distributor to place a $10,000 order from an hour to a few minutes.
- Schlumberger Ltd. saves about $2 million in communications costs by using the Net as its internal global network.
- Cathay Pacific Airways Ltd. spends between 75 cents and $1 per customer distributing its promotional pieces through the mail but only pennies by doing it over the Web. WM

The Ad Space Race

Now that you're a publisher, you must be making pots of money from advertising on your Web site, right? Right? Well, maybe you didn't crack six figures last year, but some people did, notably the 10 leading lights identified by publishing company WebTrack Information Services *(http://www.webtrack.com)* in its study of Web advertising placement. The following sites locked up 75 percent (that's $9.3 million) of total Web advertising revenues in the fourth quarter of 1995. Netscape Communications Corp., incidentally, was the second-biggest spender as well, with $556,000 invested in banners and links to other people's sites.

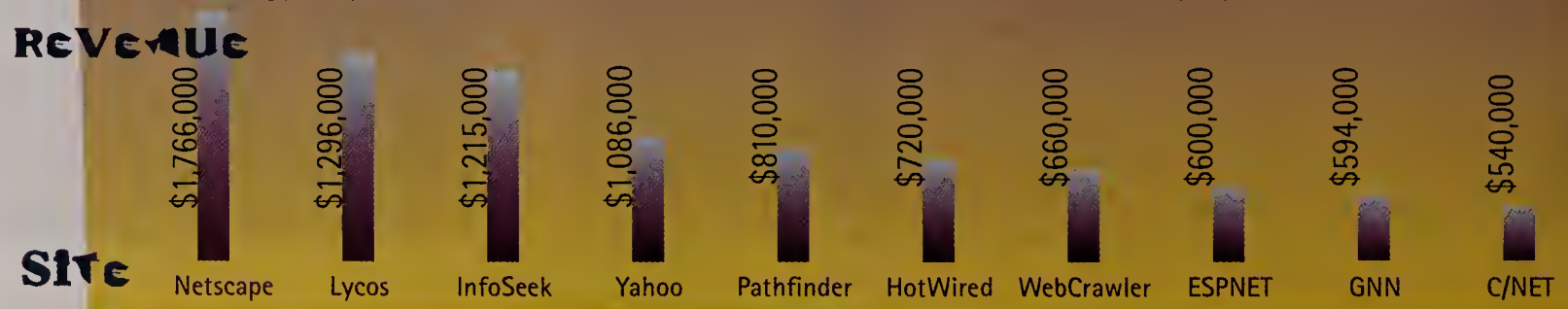


ILLUSTRATION BY MARK S. FISHER

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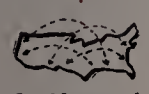

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Bad Business

Yes, we learn from our mistakes, but isn't it better to learn from the mistakes of others? Mirsky, of Mirsky's Worst of the Web (*http://mirsky.turnpike.net/wow/Worst.html*), has become an online celebrity by spotlighting all that is tawdry, ill-conceived and unfathomable in cyberspace. *WebMaster* recently asked Mirsky what stinks on the business side of the Web.

WM: What distinguishes a bad commercial site?

Mirsky: A lot of companies are just cheesy or have cheesy products, the type you'd see advertised on late-night TV or in the back of comic books. There's also a slew of tiny companies where the pages are designed by the owner and have spelling mistakes, weird claims or awful layout. Even some of the larger corporations have dumb sites. Saab's site springs to mind—it tries to create this whole online world, which is well-done designwise but not very compelling.

Then there are companies that obviously don't maintain the sites themselves—they haven't been updated for months, or there will be a link to a webmaster who was fired weeks ago. The Georgetown University Bookstore site has been left untended for a year.

And of course there are lots of pages with nonworking links, "under construction" signs everywhere and huge images that take forever to load.

WM: So what are the worst business sites on the Web?

Mirsky: I focus on worst individual products because most business sites are so full of links that it's hard to pinpoint a particular bad element. Some of the worst products I've seen are fishing fly art (basically fishing flies mounted on a frame) an Australian company selling celebrity autographs with the names of the celebrities misspelled and products trying to capitalize on the popularity of the Web ("I Love Cyberspace" bumper stickers). But the one I loved the most was a toe straightener.

WM: Any class of companies doing a particularly poor job?

Mirsky: Surprisingly, some of the worst pages belong to Internet access providers and Web designers. One site claimed to be the "Center of the Internet." Another was promoting an emblem of quality they wanted to award to other sites; they misspelled "emblem" throughout. They also talked about having family content, but there was a section for adult material.

Some others just have horrendous graphics or Netscape backgrounds that make the text unreadable. And one had a page called something like "American Web Design" with "American" misspelled as "Anerican." It stayed that way for weeks.

WM: So you find a lot of bloopers?

Mirsky: One site I picked—a long-distance company—claimed customers could save 130 percent. (It's since been adjusted to a more realistic 57 percent.) At another site—and this has also been fixed—you got a message that the trial license for their server software had run out. WM

Off the CyberShelf

It's finally happened: Our business press pals are sending us more books with "Internet" in the title than with "reengineering," "downsizing" and "empowerment" put together. Here's a sampling:

Civilizing Cyberspace: Power, Policy and the Information Superhighway, by Steven E. Miller, is a big-picture look at the development of and controversies surrounding the new electronic frontier. Miller's book, which is strikingly lucid considering the murkiness of the subject, is especially smart about privacy, security and the dangers of information disenfranchisement. Most impressive is Miller's use of history and precedent to frame issues that many believe were born yesterday. (Addison-Wesley Publishing Co., 1996)

Digital Money: The New Era of Internet Commerce, by Daniel Lynch and Leslie Lundquist, argues that yes, you really will be conducting financial transactions over the Net in the not-too-distant future, so you'd better start thinking about it now. That attitude isn't surprising: Lynch, after all, is a founder and co-chairman of CyberCash Inc., an Internet financial transaction company. Still, the book goes a long way toward demystifying the emerging approaches to digital commerce and the principles and technologies underlying them. (John Wiley & Sons Inc., 1996)

We may come off as biased promoting *World Wide Web Marketing: Integrating the Internet into Your Marketing Strategy*, by Jim Sterne, since Sterne is a regular contributor to these pages. But his advice goes beyond the "don't-make-your-graphics-too-big-and-be-sure-to-offer them-a-T-shirt" variety propounded by so many marketing pundits. Then there's the writing: "The Silicon Surf page comes screaming out of Silicon Graphics' computers and flashes through the giant backbone running down the California coast. It blasts into town on a supercharged connection and then trudges slowly up a 40-year-old pair of copper wires that gently wend their way down the street and around the corner to your house." 'Nuff said. (John Wiley & Sons Inc., 1995) WM

PHOTO BELOW BY KELLER & KELLER; ABOVE BY FURNALD/GRAY

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Small Relief

For every good reason large companies have to use the Internet, small businesses have two. With its universal reach and low entry cost, the Net hands these Davids a really big slingshot with which to shoot their messages around the globe.

"Mom and pop used to only serve the neighborhood," says Paul Earl, president of CD Solutions Inc. *(info@cdsolutions.com)*, which recently published *Using the Internet for Profit.* "Now mom and pop can serve the world."

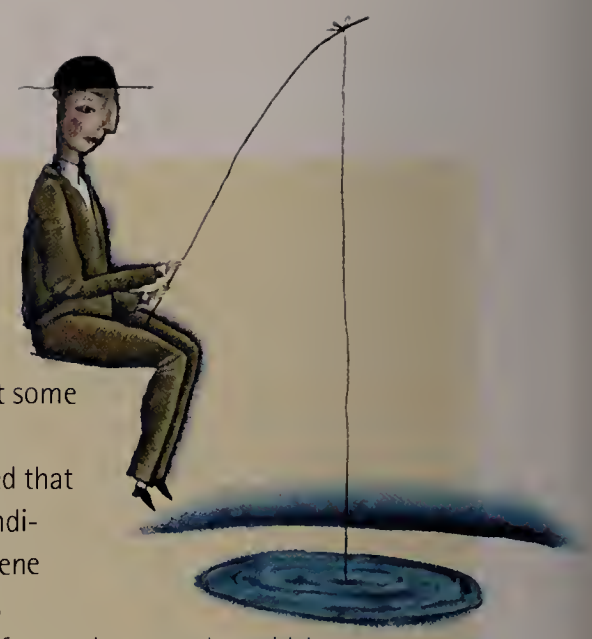
As the flow to the Net becomes a torrent, small companies are discovering benefits that go way beyond e-mail. "The most important thing they are doing is finding other organizations that can help them expand their businesses—suppliers, distributors, complementary companies," says Earl. "If you have a product that you think has international possibilities, but you need to have it translated, you just pop up in a newsgroup and get responses back."

Recognizing the Net's growing importance as a research and networking tool, consultants, lawyers and others who serve small businesses are rapidly putting their stuff online. The U.S. Small Business Administration, for example, has a well-trafficked site *(http://www.sba.gov)* that treats subjects ranging from loans to pollution. Then there's NetMarquee Online Services Inc. *(http://www.netmarquee.com)*, which offers guidance and research to "the emerging business marketplace, the readers of *Inc.*," according to COO Paul Baudisch. NetMarquee also serves family-controlled businesses, which Baudisch says have a unique need for the Internet. "They face problems like, 'I'm trying to run the business and my brother is off playing golf. How do I deal with this?'" he explains. "Being able to pose a question anonymously but having the world at large comment on it is a tremendous benefit."

The splashiest uses of the Net have so far been for marketing, but Baudisch warns small businesses against spending too much on a medium that remains largely untested. "You see a lot of companies jumping on too quickly, thinking they have to have a massive presence," he says. "I would suggest that they try a small presence first, for a few thousand dollars. They can always evolve it."

Of course, a home page does provide that much-heralded "level playing field." But the leveling effect may decline as the big guys increasingly incorporate top-flight design and glitzy technologies and as the importance of advertising the site itself grows (the company that can plaster its URL on a billboard in Times Square will attract more attention than the one relying on free listings in Yahoo!). "I don't think the gap will ever again be as narrow as it is now," says Earl. "Still, a world with the Internet gives smaller guys a better chance than a world without." WM

My Applicant Lies Over the Ocean



Look out—the talent pool you've been fishing for new hires just became an ocean. Increasingly, companies that use the Internet for job recruitment are attracting candidates from around the world, a phenomenon that has caught some of them off guard.

"We have had several people contact us surprised that they've received good candidates but [that] the candidate is from Japan or Canada or elsewhere," says Gene Wolf, president of Job Center Employment Services *(http://www.jobcenter.com)*, a kind of online yenta for employers and would-be employees. "I chalk it up to some U.S. companies thinking the world stops at our borders."

Despite the growing awareness of foreign resources, Wolf says he does not expect U.S. companies to start importing talent en masse: Red tape and delays in relocating make that impracticable. In fact, he predicts that many organizations—especially small ones—will start inserting some kind of "U.S. candidates only" clause in their want ads in order to avoid the hassle.

Other companies will find ways to use the people discovered through the Net without bringing them here. "Once electronic fund processing becomes as common as currency, there will be no need for talent to be on-site," Wolf explains. "I could hire a Web designer in Hong Kong and pay [for his services] via debit card. Small organizations like mine will be able to employ the best talent, regardless of geographic location. I'll let the politicians sort out the taxation and reporting issues."

PHOTO BY KELLER & KELLER; ILLUSTRATION BY WHITNEY SHERMAN

"Virtual Vineyards is a direct marketer of premium wines and gourmet foods. We do everything over the Internet. Orders are placed by consumers directly through our Web site, and many of our internal corporate functions operate over the Net using browser-based applications. This is a company where on-line connectivity is everything.

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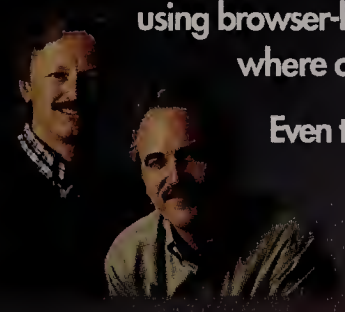

ROBERT OLSON,
PRESIDENT, VIRTUAL VINEYARDS
PETER GRANOFF,
VICE PRESIDENT, CHIEF CORK DORK

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Photo Opportunity

PHOTOWEB TURNS THE NET INTO AN ONLINE ALBUM

ELLIOT KLEIN was struck by inspiration when he applied for a job at America Online

A wonderful thing, genetics. Nowhere are Gregor Mendel's theories better illustrated than in the fragmented electronic marketplace, where diversity in the gene pool contributes to the creation of a healthy newborn organism.

A good example is PicturePlace Inc., a photo development and distribution company whose PictureWeb service converts slides, prints or photographs into online deliverables within 24 hours of receiving them. Inspired by CD-ROM technology, PictureWeb was born on America Online and has now reproduced itself on the Internet (*http://www.pictureweb.com*). Perhaps as a result of its hybrid origins, PictureWeb is hardy enough to withstand the rigors of its environment—namely stiff competition and customers who demand instant gratification.

So how does PictureWeb work? Suppose Bob wants to share pictures from his Maui vacation with his Internet buddies. He pops rolls of film in the mail and fills out an online order form, paying by credit card either over the Web or via a toll-free number. PictureWeb enters that data into its systems and verifies all order information. When Bob's film arrives, PictureWeb creates traditional prints—which it mails back to Bob—but also scans digital images into a database server running on a Hewlett-Packard Co. minicomputer. (PictureWeb will also accept and post previously developed photos.) Those images are transferred to a Sun Microsystems Inc. workstation server that makes them instantly available online to friends and family designated by the customer. The company notifies Bob by e-mail when his pictures are up; he can also electronically monitor his order throughout the process.

Once the photos are online, Bob can manipulate them, blowing up the sunset shot and deleting the "forgot-to-suck-in-the-gut" beach shot, for example. He can also choose from several presentation options, such as dividing his photos between two albums that are accessible to different user circles. Bob

PHOTO BY AVIS MANDEL

pays less than $20 to develop and post a roll of 24-exposure film; posting individual pictures costs 99 cents each. A "photo album"—essentially server space for 100 pictures—costs $24.95 per year.

PictureWeb was created by three Chicagoans. Elliot Klein, who handles the company's sales and marketing, is the former director of corporate development for the Tribune Co. and was a senior consultant for the Interactive and Direct Response Marketing Group of Leo Burnett Co. Inc. Terry Ulick, who deals with technology issues, is co-founder and corporate sponsor of the Desktop Publishing Forum on CompuServe and founder of *Personal Publishing* magazine. And Jay Bronner, who manages the company's business and financial affairs, is a radiologist with extensive experience in medical digital image processing. (The three democratically eschew formal titles—the Web, after all, invites whole new business models.)

The inspiration for PictureWeb hit Klein when he interviewed for a senior marketing position at America Online in December 1994. He didn't get the job, but he did learn about The AOL Greenhouse, a business unit of the commercial service that supports entrepreneurs developing online interactive content. Excited about the prospect of such a venture, Klein approached Ulick, a friend and former colleague who had been kicking around the notion of starting a print magazine about photo CD-ROM, a technology by which photographic images are stored on compact discs. Ulick knew photo CD-ROM was hot, but he was also aware of its limitations, especially the need for expensive hardware and software. "It got to the point where I didn't believe in photo CD anymore because I realized it wasn't a mass-market solution," says Ulick.

Financially speaking, "it's going to be hard for PictureWeb not to be successful."
—Terry Ulick

Exploiting existing infrastructures so people wouldn't have to buy their own equipment seemed a logical alternative. The two founders signed on Bronner, and in January 1995 PictureWeb applied for partnership in the Greenhouse. It easily met the Greenhouse criteria—a good idea and principals with the drive to see it through—and AOL gave PictureWeb the go-ahead in early March. By September, PictureWeb's AOL site (keyword: *PictureWeb*) was up; by December it was also on the Web.

The company keeps design and content decisions in-house for both the AOL and Web sites, but it outsources Web maintenance. Processing and image storage are done through the Web; when AOL users initiate a transaction, such as filling in a form, they are seamlessly—and transparently—transferred to the nonproprietary format.

AOL, for its part, provides the "marketing bite," according to Ulick, as well as technical and financial support and a ready-made customer base. "Over four million people use America Online, and the profile of the AOL user is the profile of the upscale camera user, a high-end amateur photographer," says Ulick. "Virtually everyone who uses AOL uses a camera."

While some say the growing popularity of the Web threatens commercial services, the two more often complement than conflict with each other, according to Danny Krifcher, vice president of original content for AOL. For that reason, PictureWeb's strategy of using both delivery mediums makes perfect sense. "What you will find is that most consumers access the Web through online services," says Krifcher. "The problem with the Web today is that the bandwidth and technology just aren't there for a great experience. AOL offers a more friendly interface, easier navigation, speed and responsiveness."

Financially speaking, Ulick says that "it's going to be hard for [PictureWeb] not to be successful." But he recognizes that competition will be keen. In October, Seattle Film Works introduced a service that enables consumers to download photos from the Web *(http://www.filmworks.com)*, and a subsidiary of Eastman Kodak Co. reportedly plans to offer similar capabilities through The Microsoft Network and the Internet. (Kodak refused to confirm this.)

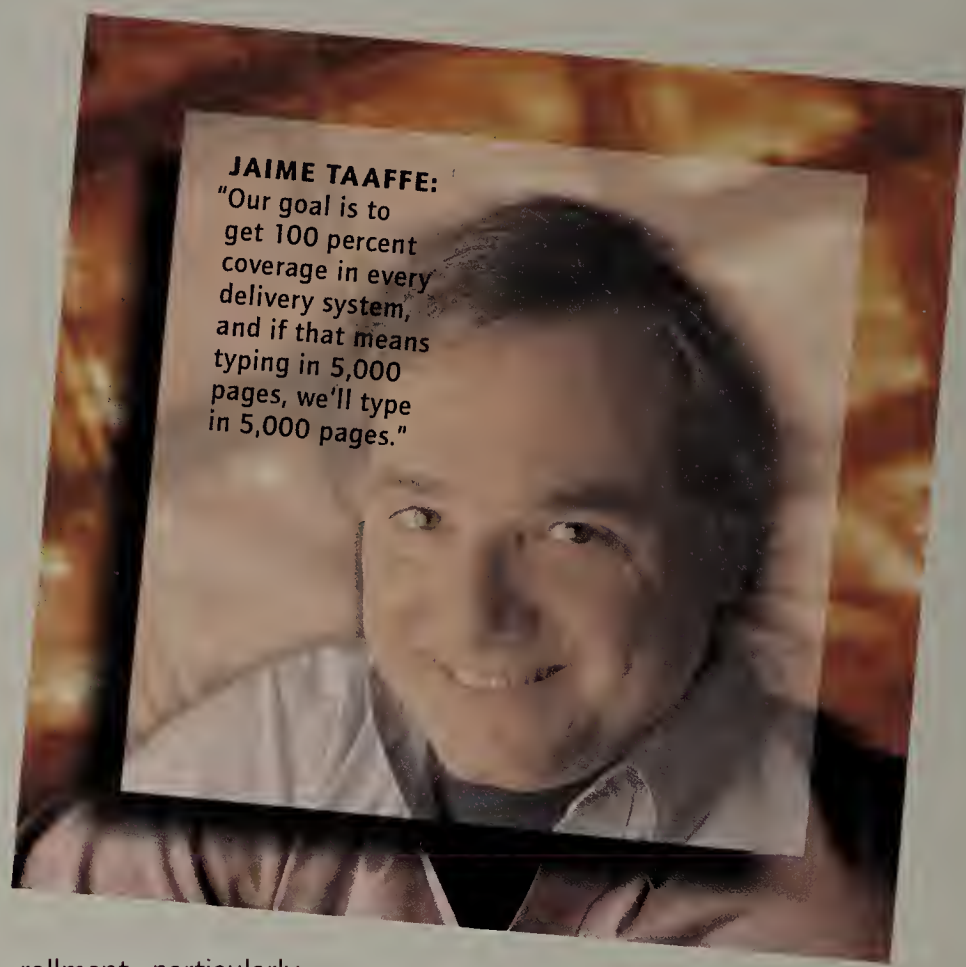
In the face of such competition, PictureWeb is taking steps to cement its position; for example, the company recently announced strategic alliances with Adobe Systems and Mystic Color Lab. "We don't see anybody else who does what we do, in terms of dynamic storage and pictures on demand from a server," says Ulick. "Photographs are a big battleground, but we're one year ahead of everybody else." WM

—Jennifer Bresnahan

http://www.pictureweb.com

Doc Management

A HEALTH-CARE INFORMATION SERVICE HELPS KEEP THE WORKFORCE FIT



JAIME TAAFFE: "Our goal is to get 100 percent coverage in every delivery system, and if that means typing in 5,000 pages, we'll type in 5,000 pages."

Choices are a joy to have and a bear to make. That's especially true in health care, where sorting out the tangle of competing plans can induce stress-related ailments in the very people those plans were created to protect.

MedAccess Corp., a new Web-based company that helps employees make smart health-care decisions, emerged from the confluence of two trends, says its president and CEO, Jaime Taaffe. First came the aforementioned proliferation of options—health maintenance organizations, preferred provider organizations and the like. Then companies began to push the responsibility for selecting plans onto employees. "They say, 'Here's a list of a dozen choices. Have a good time,'" says Taaffe, a former director of image research at Massachusetts General Hospital. "So the question becomes, How is the user given access to the information to make informed choices?"

Taaffe's answer is MedAccess Health Fair Online, a combination of exhaustive information on benefit plans and interactive worksheets for calculating the impact of each plan on a person's health and paycheck. Taaffe is marketing the service to Fortune 1,000 companies as a way to cut the escalating costs of benefit enrollment—particularly printing, mailing and processing, which for large organizations can run into the millions. The service was recently piloted at GTE Corp.'s laboratory in Waltham, Mass., where more than half of the facility's 500 employees used it as a decision-making resource during the company's open-enrollment period.

Launching a new type of business that exploits an emerging technology is vintage Taaffe. The holder of half a dozen patents in everything from cryptography to electron optics, he was both born inventive and had inventiveness thrust upon him. "I lived with my uncle when I was a child, and he used to say that if I couldn't design something, I couldn't have it," Taaffe explains. "When I wanted a bicycle, he'd say, 'Show me how to calculate the stresses on the frame, otherwise no.'"

When Taaffe got the idea for MedAccess back in 1993, he envisioned deploying the service through a variety of media (and still plans to do so). But intimations that the Internet was achieving phenomenon status coupled with his lifelong love of networking drove him to exploit the Web first. "We have been lucky in seeing a glimpse of this coming a few years ago," says Taaffe. "Luck never hurts."

Taaffe joined forces with Mass General colleague Maria

http://www.medaccess.com

PHOTO BY GEORGE SIMIAN

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Kaldis and longtime friend Gene Pettinelli. The three raised a stake "in the millions" for their new venture; they completed a leveraged buyout of the initial investors last year before the service was even launched. They also hired a staff of 12 people to develop applications, create Web pages and—most important—gather information. (MedAccess also works with numerous contractors exclusively over the Internet.) "There's a group of people who spend their days just on the phone," says Taaffe. "We called every hospital in the United States, and we asked them: How big are you? Where are you? What are your specialties?" They also queried state licensing boards for lists of practicing physicians, and the data flooded in on floppies, nine-track tapes, even thick stacks of photocopies. "Our goal is to get 100 percent coverage in every delivery system," says Taaffe, "and if that means typing in 5,000 pages, we'll type in 5,000 pages."

As a result, MedAccess's NEC Inc. database servers are brimming with information on an estimated 7,000 hospitals and 600,000 physicians as well as hospices, retirement homes and related facilities. That data is constantly being updated and added to: "I think if you look at our site in two years it will be 20 times bigger," says Taaffe.

Much of that data is available to the world at large through a free service called MedAccess Online, which Taaffe calls "our gift and our public service." The site (*http://www.medaccess.com*) is awash with health—or as the current lingo puts it, "wellness"— information, covering subjects like nutrition (what's in a hamburger?) and toxic waste (locate dumps near your home).

But MedAccess Online is primarily a marketing tool: The real revenue generator is Health Fair Online. Companies signing up for that service receive space on one of MedAccess's servers—a couple of Micron Electronics Inc. Pentium machines linked to the Net via T1 lines—where employees can go to access a database of customized benefits information. That data, which is provided by the plans themselves, is far more detailed than what is normally available. The database includes things like performance metrics (what percentage of children enrolled are immunized? how many coronary bypass procedures are performed?) and searchable lists of all participating physicians and hospitals. Health-care providers are also welcome to put up more elaborate, multimedia presences—for a fee—but MedAccess's principal revenues come from employers, Taaffe emphasizes.

The goal of Health Fair Online is to steer people toward what is best for them rather than what is merely cheapest. Employees of member companies begin by traveling to their organizations' home pages and entering a password. After using a Social Security number and a PIN to review their current benefit packages, they can check out marketing materials from the various providers as well as the financial arrangement their employer has with each. The next stop is an interactive worksheet that will calculate weekly contributions under each plan; employees can also run what-if scenarios based on their own circumstances or potential changes in coverage. The process is completed when employees designate their selections online: The electronic submission of forms, of course, saves companies the cost of rekeying.

The goal of Health Fair Online is to steer people toward what is best for them rather than what is merely cheapest.

Taaffe won't talk pricing for proprietary reasons, but he claims a "significant savings that is very easy to demonstrate." There's also the potential for improved employee health, which translates into fewer sick days and higher morale. "As an employer, I want to see my people healthy," Taaffe says. "In looking for health-care options, I want to encourage people to go to plans that practice very good preventive measures." WM

—Leigh Buchanan

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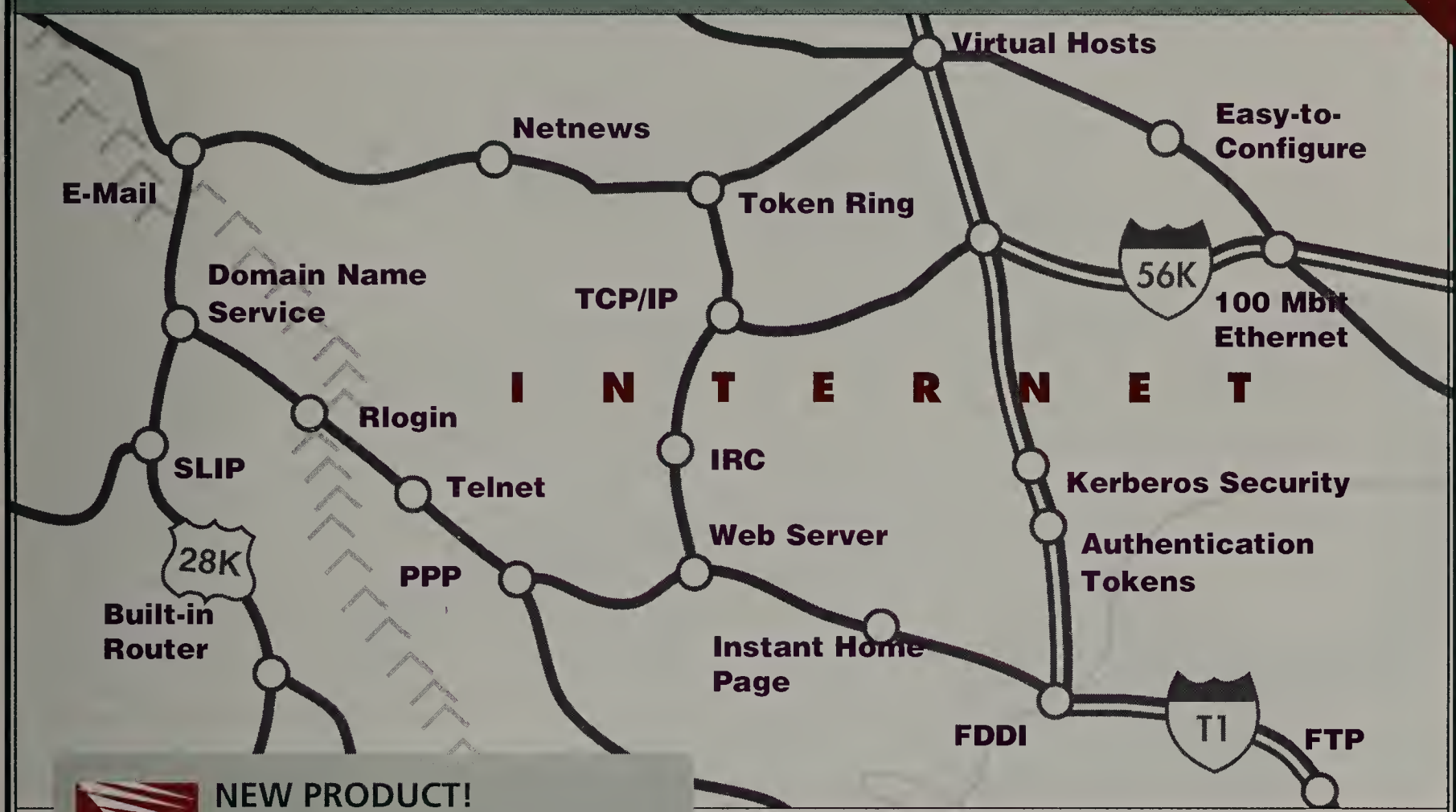

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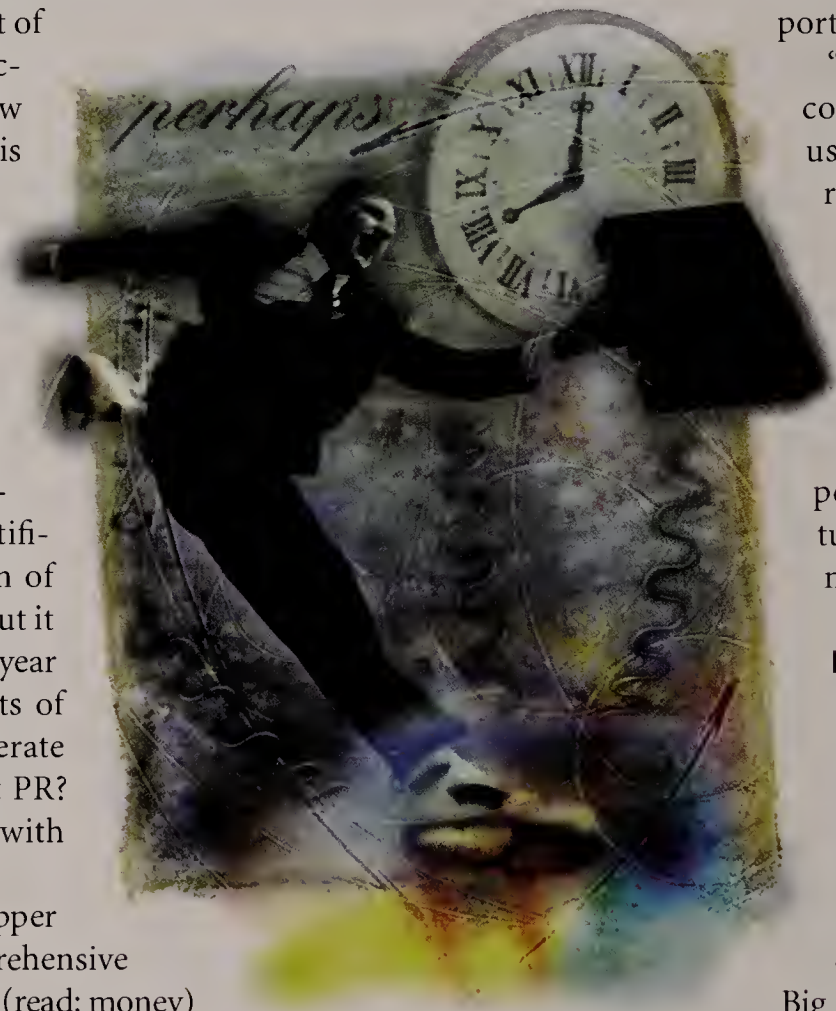
SURE, YOU CAN TAKE IT SLOW WHEN IT COMES TO THE WEB. BUT THE ONLY THING COMING TO THOSE WHO WAIT IS LIKELY TO BE ANONYMITY. **BY JIM STERNE**

Easy Doesn't It

Corporate America is nervous. The rank and file are starting to make a lot of noise about this World Wide Web thing. It's not normal. It wasn't in the coursework at business school. It has no proven ROI.

You may belong to one of those grand-old-man bureaucracies that require three forms in quadruplicate to requisition a new coffee machine. If so, you face the task of educating your CEO, your CFO, your VPs and your directors. Not fun.

Perhaps you should drag all the aging white men from their corner offices for a week of Outward Bound training. Watch them learn teamwork while dangling over river gorges. See them face the threat of being left behind unless they acquire new skills—in a hurry. How else will they learn that the Web is no longer an experiment but a competitive weapon?



In the World Wide Web Simulator

Maybe they're waiting for the WWW Simulator. Submit your Web site design and implementation plan to this rule-based, artificially intelligent interpretation of 34 million people. It thinks about it for a while, then spits out a one-year analysis. Will your site get lots of hits or be a ghost town? Generate sales or cause very unpleasant PR? It's all done automatically and with no risk of public humiliation.

Until such a thing exists, upper management will remain apprehensive about investing too much energy (read: money) into this Web thingy. Some see it as a flash in the pan. Some see it as hype only. Some see it as changing too fast to be a safe investment. Some just don't get it.

In the Conference Room

"Yes, we know we need a Web site. Our competitors have them; we should too," says the VP of corporate affairs. "But let's not get carried away. We can put up pages for the investment community and the press, but there's no need to do real transactions."

"But we should offer something for sale, don't you think?" says the VP of sales. "Just to see if people will buy. Just a handful of items. You know, test market it."

The VP of marketing pipes up, "This is a great way to distribute brochures. We can publish everything electronically, and people can download it at almost no cost. At least let's put our product line card up there." Seeing the CEO frowning, he adds, "And the annual report, of course."

"I think we should let other companies take the arrows for us," rumbles the CEO. "I authorize sticking a toe in the water; but this company didn't become a stalwart of American business by acting goofy over technology. We can do a photo shoot and video of me next Thursday so people know I support the future. But it's the future, gentlemen. It's not today."

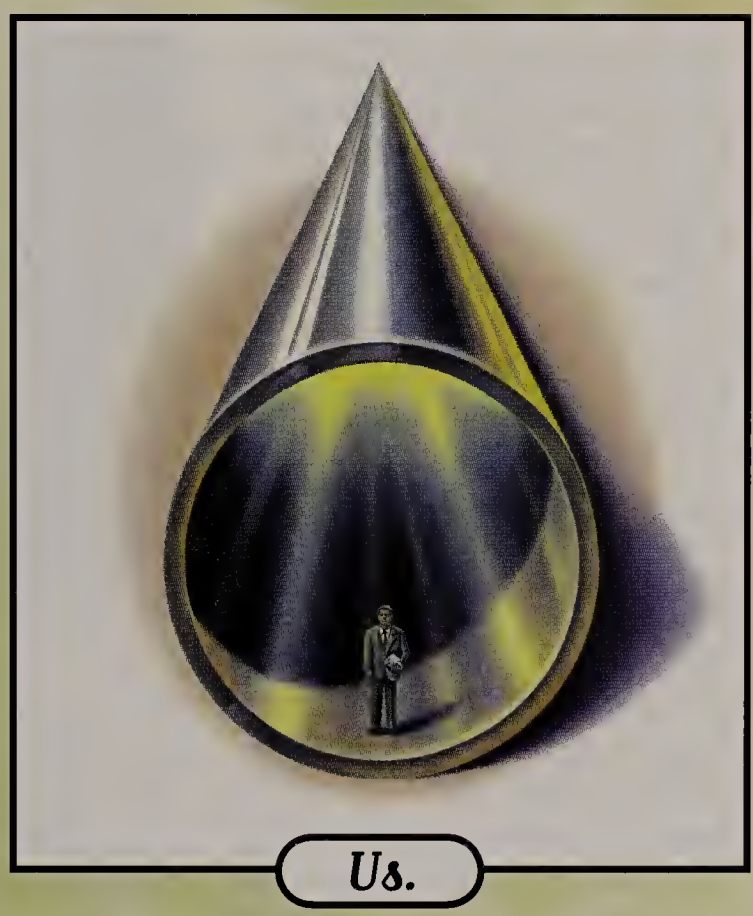
In the Short Term

As a result, corporate America's Web sites offer the annual report, the company's history, a list of places to buy products and a job opportunities page. These elements belong on every Web site, to be sure. But the Big Audience is being ignored.

Hundreds of people call in every month asking investor relations about the state of the stock. Thousands call asking about employment opportunities. But millions call, mail and walk in to buy products. Why ignore them? Whatever you sell, give them another way to buy!

ILLUSTRATION BY DIANE FENSTER; STOCK IMAGE BY STEPHAN MARKS/THE IMAGE BANK

Here's a simple comparison about choosing a Web Hosting Site.



Think of it this way: The bigger the pipeline, the faster the data flows. So your people can work faster, and your customers can access your Web site faster.

So you can make money faster.

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"Oh, we will," says the CEO, "in the fullness of time when we are sure this is the right approach. Surely there's no harm in putting up a nice, welcoming home page and working our way into selling later." No, there's nothing wrong with that approach. Except that it's going to be a lot more expensive.

In the Red

Let's say GigantiCorp puts up a Web site with all the usual suspects: About the Company, Latest Press Releases, etc. To that they add a fully integrated, full-product-line order-processing system. The attention they garner is significant. *The Wall Street Journal* calls. *Time* magazine writes an article that makes people forget about its "cyberporn" debacle. People flock; they like what they see, and they send their friends.

In the scenario the CEO favors, GigantiCorp puts up a Web site with no products to buy (or—even worse—only a few, which incorrectly sets customers' expectations), and the results are much different. The public announcement of this site draws loyal customers and proactively interested prospective customers, but they find something missing—fulfillment.

Lacking fulfillment, these assertive shoppers wander off. They might bookmark the page. They might paste yellow stickies to their terminals for later visitation. But more likely they'll simply surf to greener pastures. And the amount of advertising, sweepstakes, discounts and rebates required to get them back will be enormous.

In the News

The absorbing question is whether it is better to be first or best. Once, being on the Web at all was newsworthy. When the Bank of America *(http://www.bofa.com)* went live it made all the papers. Today—and especially for those who are planning for tomorrow—this is no longer true.

Some corporate Web sites have been up for more than a year. Some are on their third and forth iterations. The first link on the original Bank of America home page said, "PAYMENTS." They have since come up with a kinder, gentler approach, inviting you to "Build Your Own Bank." But as progressive as this is (take a look at The Microsoft Network at *http://www.msn.com* for a wonderful version of page customization), it is now outclassed by Security First Network Bank *(http://www.sfnb.com)*.

Security First is a full-service, no-bricks-and-mortar bank open 24 hours by seven days with checking accounts, ATM access, electronic bill paying and certificates of deposit. Mark Twain Banks *(http://www.marktwain.com)* is now selling DigiCash's e-cash online. Bank of America has some catching up to do.

> Clients will stay loyal if they can use the Web to track their dealings with you more easily than they can with your competitor.

In the Details

Is it possible to respond to this constant competitive pressure? Just ask AT&T and Sprint. They spend millions of dollars branding the "You Will" message into people's brains or getting Candice Bergen to smile knowingly into the camera. But the mastery is behind the scenes. Marketing says "Let's roll out a new calling circle program next week to counter the competition!" And they do —with the emphasis on "program."

When a telecommunications company throws its marketing weight into the fray, IS is pressed into action. The ability to code a new billing system in a matter of days is what gives these companies the ability to compete. You can do no less. All companies are becoming information brokers. The better the broker, the better the chances of keeping existing customers and finding new ones.

In the Lead

That means posting information about your industry in general and about your products, procedures and policies in particular. Clients will stay loyal if they can use the Web to track their dealings with you more easily than they can with your competitor. UPS is offering package tracking to show FedEx they're not the only game in town. But you can find out about a UPS package only after it has been delivered; FedEx tracks in real time. That's enough of an edge to keep UPS buying antacids and having them delivered overnight.

If the CEO is getting ribbed about it at the golf club, and you have no choice but to put up a Web site ASAP, take your predicament to the public. Rather than put up large "Under Construction" signs everywhere, invite people into the "Under Discussion" section. They, not the CEO, are the end users. Ask them what they want on their GigantiCorp Web site. They'll tell you. Believe me, they'll tell you.

But if you can avoid the incomplete Web site, do so. Walt Disney didn't want his namesake pleasure park opened to the public with just one ride. He wanted people rushing around, eager to see what else there was and delighted when they found it. Variety. Choice. Excitement about what's around the corner.

You say your CEO still wants to avoid transaction processing on the Web? Time to check out *http://www.outwardbound.org* and hope for the best. WM

Jim Sterne (jsterne@targeting.com) *is president of Target Marketing of Santa Barbara. His new book,* World Wide Web Marketing, *is available from J. Wiley & Sons.*

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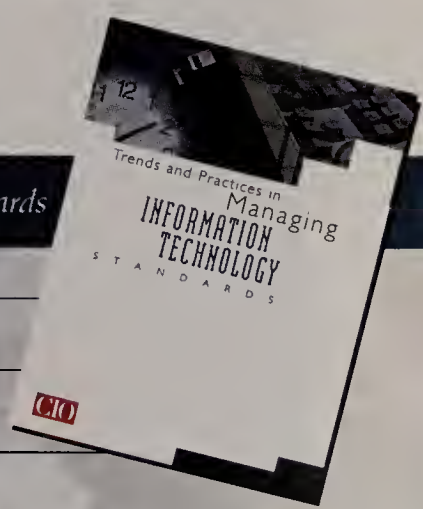

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THE WEB HAS GOOD LOOKS, BUT IT'S WHAT'S IN YOUR DATABASE (AND WHETHER IT'S ACCESSIBLE) THAT COUNTS

BY PETER L. BROOKS

The Sweet Smell of Access

Too often, companies treat Web pages as a series of billboards: pretty pictures with nothing behind them. But really useful applications, the kind that provide true business value, involve the processing and presentation of information—information that often resides in relational databases. A logical conclusion can be drawn here: By connecting databases to Web pages, companies can improve the depth, quality and timeliness of the information and services they provide to a great many customers, both inside and outside their organizations.

With so much to be gained, why haven't more organizations made the connection?

There are several explanations. First, corporate colonization of the Web is a recent phenomenon: Businesses are just beginning to conduct sales, marketing, customer service and other database-reliant transactions over the Internet. There are also technical obstacles, ranging from the obvious fear of security breaches to a lack of software for linking Web pages and databases. Not surprisingly, numerous vendors are rushing into that particular breach. Database companies like Oracle Corp., Informix Software Inc., IBM Corp. and Sybase Inc. are improving their products' interoperability with the Web, while a number of innovative Internet companies are pursuing a more open solution.

Another barrier is that many early developers of Internet applications simply lack database skills. I recently attended a trade show for Internet developers, where, at a packed session on how to access databases from the Net, the speaker kicked off by listing the advantages of relational databases over flat files. Talk about a paradigm shift!

Despite these drawbacks, a few adventurous organizations have gone ahead and developed sophisticated Web-database applications with excellent results:

- The Metropolitan Museum of Art's Web site (*http://www.metmuseum.org*) enables visitors to order merchandise from its catalog. Simply click on a selection to drop it in a virtual "shopping bag"—in actuality, an Oracle database residing in the museum's computer center. If you're not sure whether Uncle Harry would prefer the Pollock abstract or the Rubens nude, you can save the bag, exit the Internet and call Aunt Miriam for advice. When you return to the Web site, you can reclaim your bag and place the order as though the process had never been interrupted. (The bag itself remains invisible until the order is finalized.) Your order travels directly to the distribution center, eliminating several manual steps and ensuring that merchandise is delivered to Uncle Harry as quickly as possible.
- The Internet Shopping Network (*http://*

ILLUSTRATION BY FERRUCCIO SARDELLA

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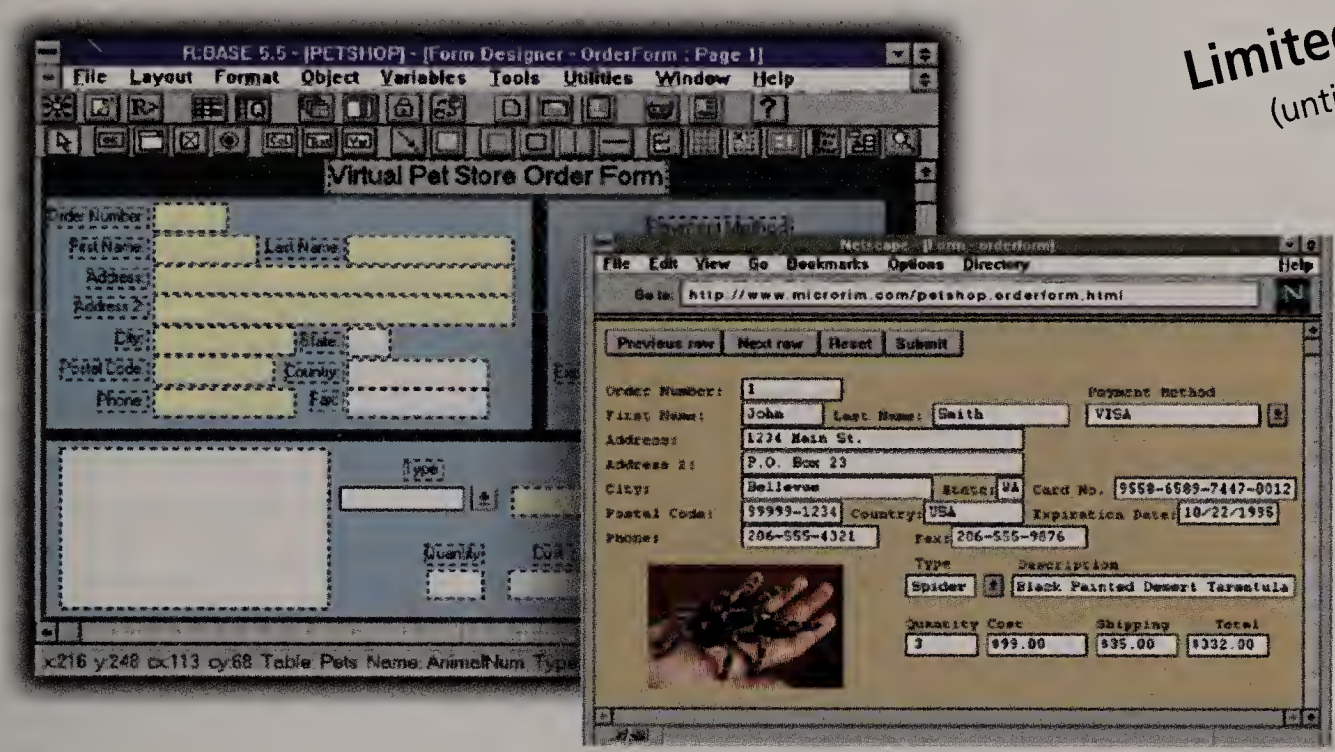

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www.internet.net), a wholly owned subsidiary of Home Shopping Network, sells goods from catalog companies such as Hammacher Schlemmer and FTD Inc. florists as well as more than 20,000 computer products. The company, which offers both text and images over an Informix-OnLine Dynamic Server database connected to a Netscape Web server, has 80,000 customers and generates more than $1 million a month in revenues. Users place and track their orders online. There are daily specials, and availability and pricing can change hourly.

■ Investors Group Financial Services, of Winnipeg, Canada, which manages more than $25 billion in assets, is evaluating account portfolio maintenance, sales-force automation, and other internal and external Web applications. The company is using Spider Technologies' Spider visual Web-database application builder to access Informix and Oracle databases running on Hewlett-Packard machines.

Such applications are not, by their nature, difficult to create, but problems arise because the Internet was not designed to accommodate them. Perhaps the foremost difficulty is that HTML, the lingua franca of the Web, does not support structured query language (SQL), the standard access language that enables users to access and manipulate information stored in databases. To solve the problem, developers are turning to the common gateway interface (CGI), a mechanism for linking Web servers with outside applications. A CGI program might, for example, enable Web site visitors to fill in a form and receive in response specific information from a database.

Unfortunately, CGI may exhibit performance problems when used for database applications. As a result, some vendors are reducing reliance on CGI code to access databases, while others are working on optimizing its performance. CGI programs are typically written in such languages as PERL, C and C++, but a number of companies, including Bluestone Inc. and Iband Inc., now provide a visual drag-and-drop development facility to simplify the process. In addition, the growing acceptance of Sun Microsystems Inc.'s sophisticated Java language as an Internet standard should eventually make such development even easier, enabling developers simply to download a publicly available Java program that will retrieve the data.

Security, the perennial concern of both Internet users and developers, is especially vexing where databases are concerned. When a database is accessed through the Web, companies lose the ability to associate a user ID with each data transaction. Programmers face the imperfect choice of either funneling all database activity through a single ID, where security cannot be performed on an individual user basis, or attempting to match every transaction with a user and inserting the appropriate ID into that transaction's SQL statement. Thankfully, in the not-too-distant future, we expect a mechanism for associating user IDs or names with individual transactions, thus better enabling companies to authenticate their Web-based dealings.

Another troublesome issue is licensing. Standard licensing agreements are generally based on the number of users accessing the database. But when a database is hooked up to the Internet, that number can climb dramatically, particularly in the case of external applications. In response, most database vendors are currently trying to work out "fair" Internet access pricing terms. Informix, for example, will probably use a per-CPU model.

Although many professionals believe the Internet in its current state is neither sturdy nor secure enough to support mission-critical database applications, the opportunities for exploiting the conjunction of the two technologies are too promising to ignore. Companies should take a measured approach to creating Web-database applications by following these recommendations:

■ Set your parameters. Identify a key

AN INTERNET DATABASE ACCESS SAMPLER

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http://www.earthweb.com
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Lotus Development Corp.
http://www.lotus.com
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Netscape Communications Corp.
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Oracle Corp.
http://www.oracle.com
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Speedware Corporation Inc.
http://www.speedware.com
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Spider Technologies Inc.
http://www.w3spider.com
Spider

SQLweb Technologies Inc.
http://www.SQLweb.com
SQLweb

Sun Microsystems Inc.
http://java.sun.com or *http://www.sun.com*
Java

Sybase Inc.
http://www.sybase.com
Sybase web.sql

*Most vendors have products or demos available for downloading for 30 to 90 day trial periods

business goal, advantage or improvement that your organization could obtain by linking a database to the Internet. Then determine the scope for a small prototype. Appropriate applications do not leave the company exposed in the event of a security breach; they let site visitors extract information but not update it; they are scaleable and they support many users.

■ Manage risk. For most companies, the question is not whether to make databases Web-accessible but when. Competitive pressure to exploit the medium as soon as possible pulls in one direction while the relative youth and imperfection of most available tools pulls in the other. So the decision becomes critical. Is it better to invest current resources to experiment and learn or wait until the technology matures and better off-the-shelf solutions are available? Companies should perform a benefit-risk alternatives analysis based on either qualitative measures or quantitative probability modeling, taking into account potential customers, revenues and investment costs.

■ Learn the technology. You cannot make informed decisions based on hype. Hire consultants to bring your organization quickly up to speed or assign staff to develop technical expertise.

■ Choose the right vendor. When selecting your technology partner, it is crucial to think about possible future applications. Most current Internet database functionality is pretty basic; therefore, inquire into the visions of potential suppliers. Do you want to partner with your current DBMS vendor or are you leaning toward multidatabase access for your Internet applications? And be sure to discuss licensing terms before your applications are built—not after.

Even if they proceed slowly over the immediate future, companies must form an Internet strategy or risk becoming anachronisms by the year 2000. As security issues are resolved and the Internet is accepted by businesses and consumers alike, database connectivity will grow increasingly common. Remember, information is your company's most precious resource. Giving your customers access to that resource will make you precious to them. WM

Peter L. Brooks is a management consultant with the Advanced Technology Group of Coopers & Lybrand Consulting, where he specializes in assisting organizations to achieve business value from the use of new technologies. He is based in Boston and can be reached at 74477.3043@compuserve.com.

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STOP

Sorry.
This server is currently unavailable.
Please try again later.

OK

STOP

The server is still too busy to respond.

Unless it broke down.
Again.
Perhaps tomorrow.

OK

STOP

Your repeated attempts to connect
are beginning to make the server cross.
Please go away.

OK

STOP

Back again?
What are you, some kind of rejection junkie?
This server is still unavailable,
and undoubtedly will remain so for the
foreseeable future.

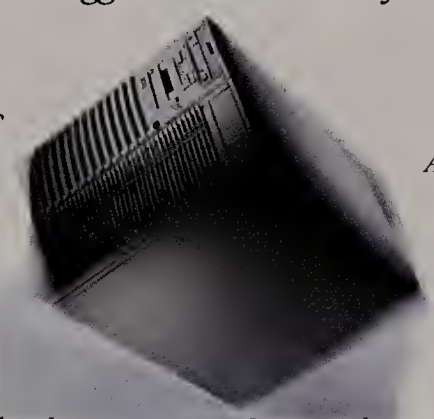
OK

STOP

You can bang the keyboard 'til you're
blue in the face, but this server just isn't
going to have time for you.
Not now. Not ever. Get over it.

OK

If the purpose of your Internet site is to annoy as many people as possible, most any server will do. However, if you'd like to offer access instead of agita, try running on an Internet AlphaServer™ system. The 64-bit speed of Alpha makes other servers look like sluggish@sloth.slo. So your site handles huge volumes of visitors, instead of turning them away. Reliability is standard equipment. So is a three-year warranty.



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Rooms With A View

INTERNET BOOKING HAS BEEN SUCCESSFUL FOR HOLIDAY INN, BUT IT'S JUST THE BEGINNING. THE COMPANY'S LATEST WEB PROJECTS—FROM FRANCHISEE TRAINING TO VIRTUAL HOTEL ROOMS—ARE WORTH CHECKING INTO. **BY LEIGH BUCHANAN**

LES OTTOLENGHI: "The virtual hotel needs people who are hospitable, too."

WALK into Les Ottolenghi's 25th-floor office and you're immediately struck by the panoramic views of Atlanta outside his floor-to-ceiling windows. Talk to him for a few minutes and you're treated to another panoramic view—of a hospitality industry transformed by the Internet and a digital future so bright that the traveling public will have to wear shades.

Ottolenghi, a former software entrepreneur and Emory University Woodruff fellow, is director of emerging technologies for Holiday Inn Worldwide. Hired two years ago to help the company evaluate its electronic delivery options, he now heads a 26-person department charged with thinking big thoughts about technology and translating them into front-of-the-pack customer services.

The most important of those services—the capability of customers to book rooms over the Internet—debuted with Holiday Inn's Web site (*http://www.holiday-inn.com*) in June 1995. It was the industry's first such application, and, like

HELEN EDELSTEIN acted as liaison among content providers, engineers and outside vendors.

PHOTOGRAPHY BY RICK TAYLOR

all Web firsts, it was besieged by visitors and lavished with media attention. Without additional promotion, the company now averages 700 Internet bookings a week—almost all new business, according to Ottolenghi. "Holiday Inn gets a million reservations a week easily, so [the number made over the Net] is still a very small percentage," he says. "But what [the service] does is pay for itself."

And it may do much more than that if the volume increases, as Ottolenghi believes it will. Holiday Inn saves 25 percent on every reservation made through its Web site rather than over the phone or through an airline-owned global distribution system (GDS) such as Sabre or Apollo (see related story, Page 40). But old habits die hard: Company research shows that, at this point, most customers visit the site for information, then log off, consult with family members or an administrative assistant and ultimately make their reservations over the phone. If more people can be enticed to book online, Ottolenghi suggests, Holiday Inn's savings will rise accordingly.

But being the first on your block to have something is a briefly held distinction on the Internet. A few months after Holiday Inn introduced Internet booking, competitors such as Hyatt and Promus (Embassy Suites, Hampton Inn) began offering

reservation services on their Web sites. Unwilling to relinquish its lead, Holiday Inn has been experimenting with slick new technologies: creating an electronic brochure that allows visitors to view information in real-time and enhancing its separate Crowne Plaza site with virtual reality tours. (Holiday Inn is a beta site for Apple's QuickTime VR.)

In addition, the company is incubating several novel applications, including digital business cards, a Web-based meeting planner and virtual hotel rooms—Holiday Inn branded, natch—where people can hang out when they're online and store their stuff when they're not. "Being on top of the wave isn't enough when you're dealing with something like the Internet," says Martin Gray, vice president of marketing for Holiday Inn's Select and Express Hotels and SunSpree Resorts. "You have to be out in front of it."

That Holiday Inn has gotten so far so fast makes sense for two reasons. First, its customer base comes Internet-ready: Company research demonstrates that 70 percent

HERE, THERE OR EVERYWHERE?

On the Internet, there's more than one way to be seen

SINCE NO ONE IS SURE WHAT WORKS ON THE WEB, IT IS USEFUL to examine two opposing business models within the same industry.

Holiday Inn's strategy for attracting business, which we'll call the "fission" model, involves creating hypertext links to and/or partnerships with travel-related sites all over the Net. Those include not just obvious suspects like travel agents, car-rental companies and airlines but also sites devoted to mountain-biking or whale-watching excursions.

"We have to be *inside* every opportunity," explains Les Ottolenghi, director of emerging technologies. "There's a company that offers trips to the Galapagos Islands. They have a great site where you can see where they're going every day and take a VR tour of the ship. That's the kind of enterprise we need to be doing stuff with."

As an early step, Holiday Inn is discussing possible projects with Kruger National Park in South Africa. "We would link to their site, but maybe we would also help them put up cameras in their park," says Ottolenghi. "Web users could see daily live shots from the lion's den or view what's going on with the giraffes."

ILLUSTRATION BY W.B. JOHNSTON

ANN GLOVER: Marketing decides "what the site will look like tomorrow or two years from now."

of Holiday Inn Priority Club guests have online accounts and 80 percent of business travelers carry a laptop. Participants in its Preferred program are even more wired: 78 percent access on-

Holiday Inn saves 25 percent on every reservation made through its Web site.

line services or the Internet, with travel research being their third most-frequently used application.

The second reason for the company's aggressive Internet stance is its core technology competency. While most people associate Holiday Inn with big green signs and fluffy white towels, Ottolenghi

While Holiday Inn wants to disperse its name all over the Net, some of its competitors are pursuing a "fusion" model, in which they congregate on a single site. That site, a two-year old enterprise called TravelWeb (*http://www.travelweb.com*), provides information on 7,000 hotel properties and 30 chains, including Hilton, Best Western and Days Inns. Visitors can search for accommodations by brand name or by more-general criteria, such as location and amenities. There are pictures of each property, and the company is starting to experiment with such leading-edge technologies as Shockwave.

John Davis, president and CEO of Pegasus Systems Inc., TravelWeb's parent company, says TravelWeb's consolidated—or "catalog"—model is more efficient for customers using the Internet. "How often does the consumer say, 'I want a hotel room; let me look at Radisson's site? Oh, Radisson doesn't have a room. I guess I'll have to find Holiday Inn.' Baloney. I don't want to spend my afternoon going from site to site to see what's available."

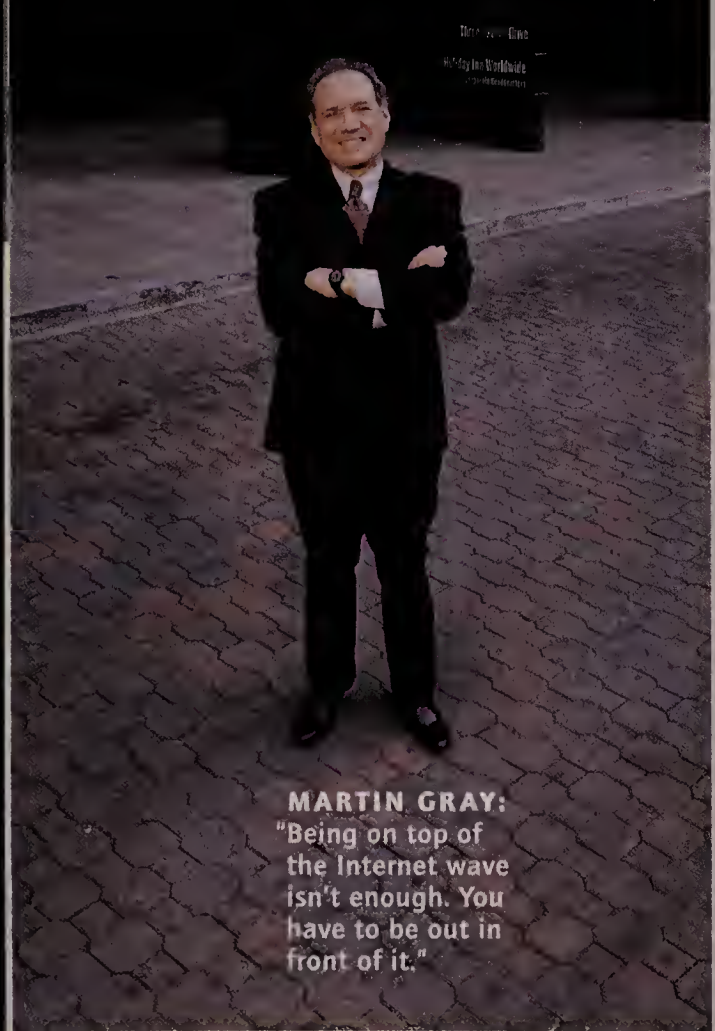
TravelWeb handles technology and security for its clients and creates all their Web pages, using a combination of its own templates and customer materials. And it recently began offering Internet booking through its corporate sister, The Hotel Industry Switch Co., or THISCO. (THISCO links hotel reservation systems with the airlines and handles about 60 percent of the electronic bookings made by travel agents.)

Advantages to TravelWeb's approach include a low entry point (hotels pay $250 to $350 per page), the outsourcing of security and other headaches, and the visibility and promotional heft that come with mass. Disadvantages include the loss of control implicit in any outsourcing arrangement, smaller savings from Internet bookings (hotels pay TravelWeb $2 for each reservation made through the site—still less than half what they pay the airline-operated systems) and the greater difficulty of forming one-to-one relationships with customers.

Needless to say, the fission and fusion models aren't mutually exclusive. A number of TravelWeb hotels have also built their own sites, and Holiday Inn hasn't ruled out the possibility of joining TravelWeb. "I think we'll end up working together," says Davis. "All these sites out there can only survive so long by themselves."

–L. Buchanan

Hotel guests will be able to access the Web and other services through their television sets.



MARTIN GRAY: "Being on top of the Internet wave isn't enough. You have to be out in front of it."

NOBODY'S PERFECT

The quibblers quibble

WHEN HOLIDAY INN'S WEB SITE WAS LAUNCHED LAST June, it was showered with attention. Company officials conducted about 350 media interviews in the first month, and most of the resulting coverage was of the "all hail the Internet pioneer" variety. But as the glow of novelty begins to fade, some criticisms are cropping up among the plaudits.

In December, travel writer Suzanne Carmichael complained in *The New York Times* about her less-than-satisfactory experience using the company's site: "Four attempts to get information on the Crowne Plaza Hotel in New York were rebuffed when, after I had waded through tedious, time-consuming menus, the screen flashed once, then disappeared, the connection terminated." Another report in the *Times* griped that the site incorrectly stated the distance from the London Mayfair Holiday Inn as being "two miles from the Tower of London and 25 miles from the Tower Bridge and the River Thames—odd since the Tower of London sits on the bank of the Thames near Tower Bridge."

The site could also stand more-regular housecleaning. While new information and features appear with reasonable frequency, the old and the outdated sometimes linger like dust bunnies under an unmade bed. Last January, for example, visitors could read about a kids-eat-free promotion that had expired four months earlier and a Crowne Plaza Online Sweepstakes they could no longer enter.

At this stage of the game, such glitches are expected and probably universal. (Let the Web site that is without sin cast the first stone.) But as standards of excellence rise, it is important to remember two things. Web sites, like children, need constant tending. And mistakes—because they are so easily fixed—must be.

–L. Buchanan

says the company's real competitive advantage is its Holidex reservation system, the only one in the industry that is both real-time and online 24 hours a day. The system is supported by powerful mainframes, a Hughes Aircraft satellite and a sophisticated very small aperture terminal (VSAT) communications center, says Ottolenghi.

Holiday Inn's technology gave it an edge circa 1992, but even back then the company's executives were anticipating 1995. Intrigued by the talk of new electronic links between businesses and customers, they were confused by the profusion of technologies competing to provide those links: CD-ROM, online services, the Internet and interactive television, which at the time was touted as The Next Big Thing. In 1994, they hired Ottolenghi to unmuddy the waters. "I sat down with the [available] information for the first six months, and I went, 'synthesize, synthesize, synthesize.' Then I realized, 'It's the Web!'" recalls Ottolenghi, slapping his desk.

Ottolenghi wanted proof that his instinct was right—but even more, he wanted to begin. So Holiday Inn took a chance: On Valentine's Day 1995, it launched its Web development initiative concurrently with a survey meant to discover whether its customers were ready for it. (To Ottolenghi's relief, the

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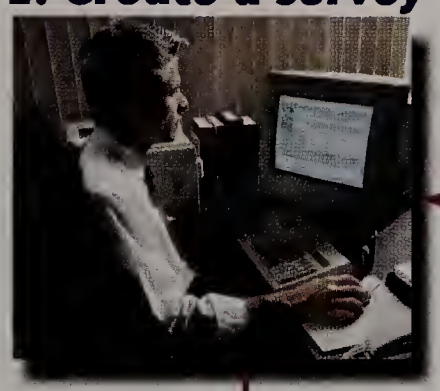

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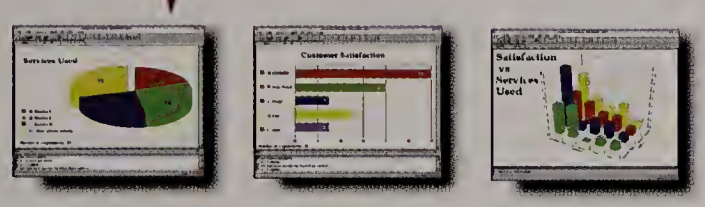

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TOO GOOD TO PASS UP

The economics of the Web make online reservations a no-brainer

FOR HOTELS THINKING ABOUT OFFERING RESERVATIONS over the Internet, the economics aren't especially complicated. Currently, about 72 percent of customers book rooms directly (without a travel agent), costing hotels $6 to $18 per reservation in labor and communications, according to John Davis, president and CEO of Pegasus Systems Inc., TravelWeb's parent company. The remaining 28 percent use travel agents, who book through the airlines' global distribution systems at a cost of $4 to $18 per reservation. Using the Web, hotels pay only for creating and operating their own sites, and they obtain a powerful marketing vehicle into the bargain.

Martin Gray, vice president of marketing for Holiday Inn's Select and Express Hotels and SunSpree Resorts, thinks the economic argument will strengthen as more people book online. Within five years, 60 percent of reservations will be made electronically, he predicts; within 10 years that will rise to 80 percent. And the Web may be the prime vehicle for such transactions. "As the quality and content of the Net evolve, people will see it as the fastest way to make those connections," says Gray.

But where there's opportunity, there's also danger. Gray sees Holiday Inn's Internet strategy as, in part, defensive, and he's not just worried about other hoteliers. "On the Net, a company like Microsoft could get into the reservation business and into the distribution channels that are normally operated by the lodging companies and literally take them over," says Gray. "We don't ever want to cede that to any other company."

–L. Buchanan

answer was "yes.") IS and marketing provided funds for the launch, which was budgeted at a half a million dollars but came in well under that amount.

Although the emerging technology department lives in IS, Ottolenghi had insisted as a condition of his employment that the group's initiatives be cross-functional. So, in addition to hiring his own staff, all of whom came from outside Holiday Inn, he quickly formed a SWAT (software and technologies) team comprising about 30 representatives from every division of the company. That group set a launch date for the site and then broke into tactical teams to accomplish various tasks, reconvening every Friday to compare notes. Their efforts were coordinated by Manager of Online and Internet Opportunities Helen Edelstein, who also acted as liaison among content providers, engineers and the outside vendors hired to create the site's graphics.

"Holiday Inn, a renter of physical space, becomes a renter of cyberspace."

– LES OTTOLENGHI

The site was ready by the end of May, but SWAT team members "sat around and twiddled our thumbs for two weeks until the PR stuff was lined up," says Ottolenghi. It finally went live on June 14 and, despite scant fanfare, drew nearly 5,000 visitors in the first 90 minutes of operation. (A separate site for the company's upscale Crowne Plaza hotels—*http://www.crowneplaza.com*—debuted several months later. Like the properties themselves, the Crowne Plaza site is tricked out with more special features than its Holiday Inn counterpart .)

Once the site was established, full responsibility for both funding and operations passed to the reservations segment of marketing, designated as heir because "it is the point of transaction where revenue is generated," says Edelstein. The site is overseen by Ann Glover, manager of training and marketing coordination, who returned to Atlanta last August from a two-year stint in Amsterdam to find herself suddenly responsible for the company's Internet presence. She now spends about half her time developing promotions for the Web, consulting with other departments that want to add content and working with the two design firms—Galileo Inc. and Swan Interactive Media Inc.—that create the site's graphics.

Unlike many marketing departments, which simply pass text and images to a corporate webmaster, Holiday Inn's marketing group actually does its own coding. Two members of Glover's staff completed HTML training last year, and now they prepare their own updates and stage them on a server, from which a programmer moves them to the Internet. "It certainly takes the stress off of IT," says Glover. "And it's much less expensive for us to do it than to have it done by one of our vendors."

Glover describes her mission as "day-to-day upkeep and deciding what [the site] is going to look like tomorrow or six months or two years from now." But the blue-sky stuff remains the province of the emerging technologies group. "As they see fit, they add things, change it, make it more robust," says Ottolenghi. "We also

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look at ways to improve it, but my job is to go on to the next greatest thing."

That next greatest thing—or things—is an assortment of applications aimed at both internal and external customers. Furthest along is Holiday Inn OnLine, a training tool for employees and franchisees that was deployed in January. The bulk of the training material is distributed on CD-ROM, but users can obtain updates from the Web, not to mention standards, fact books and current information on marketing, human resources and franchising. The Web segment will also help far-flung franchisees communicate with one another as e-mail, live-discussion and videoconferencing capabilities are added.

Holiday Inn OnLine is expected to save the company printing and mailing costs, but another application might actually generate revenue. That application is a box—expected to be tested in some rooms by June—that will let hotel guests access the Web and other services through their television sets. Visitors will be able to use their remote controls to surf the Net, check their e-mail or send faxes; if they become bored, they can simply switch over to the TV. The boxes, which Holiday Inn developed with two strategic partners, cost $300 each, and Ottolenghi is hoping for an ROI of 17 to 20 percent from business folk willing to pay for the convenience. "This estimate is based on surveys [indicating] that customers like to go to a room to relax; they don't want to plug in their laptops," says Ottolenghi. "But if they can get a few things done—like track their FedEx packages—[they think] that's great."

Another application on the fast track is a Web-based tool for meeting and conference planners. Salespeople for the company's Select hotels, which host many such events, would leave prospective customers with diskettes that connect them to a special part of Holiday Inn's Web site. There, customers could take VR tours of different properties; use an online "slide rule" to calculate variables like space requirements, number of meals and cost, and even send faxes or voice messages to others involved in the arrangements. Gray, who is leading the project, expects that within 12 months planners will be able to make all their arrangements—up to and including booking the facility—online.

Meeting planners can take VR tours of the hotels and use an online "slide rule" to calculate space requirements and meal costs.

The final near- to midterm project involves several promotions around Travel Buff, a geography board game for which Holiday Inn holds the lodging industry's electronic rights. Travel Buff is already a popular feature on the company's Web site ("We have one lady who's logged in over 100 times to play," says Edelstein), and Holiday Inn is planning an electronic billboard in Times Square that will interact with the Net version á la Joe Boxer (see "Strands Across the Enterprise," *WebMaster*, November/December 1995).

Here and Yet to Come:

- Internet booking system
- In-room Web access
- Intranet training tool
- Web-based meeting planner
- Electronic business cards
- Cyberhotel
- Cybercafe

But ambitious as those projects are, in ingenuity they pale beside Ottolenghi's cyberhotel. That's the code name for a longer-term project that emerging technologies is just now beginning to map out. The beauty of the thing is that it doesn't simply deploy technology in the service of hospitality but makes the technology itself hospitable. As such, it perfectly blends the company's two core competencies into an entirely new type of product.

Ottolenghi describes the cyberhotel as "a room where you live when you're not online—where your cyber-essence lives." That room is a Holiday Inn room, of course, with a virtual desk and a virtual Rolodex and a virtual closet full of icons that act as graphical bookmarks for other sites. Guests will be able to hold meetings there or receive electronic "packages"; when work starts to wear, they can mosey "downstairs" to the "cybercafe," to listen to—or even perform—musical and comedy acts. They will also have at their disposal an electronic bellhop and concierge: intelligent agents that fetch things for them from the Net. "The virtual world needs people who are hospitable, too," says Ottolenghi.

The cyberhotel and cybercafe—neither of which is a sure thing—will likely incorporate Sun Microsystems' Java and whatever else is cool or cutting edge at the time of deployment. Ottolenghi expects Priority Club members to get first crack at cyberhotel rooms as a reward for regular patronage, but they may also be rented out. "So Holiday Inn, which is a renter of physical space, becomes a renter of cyberspace," he explains.

The company is considering other digital dividends as well, including electronic business cards that site visitors will receive by typing in their vital stats (thus providing Holiday Inn with valuable marketing information) and then distribute to others over the Web. Those business cards, not so incidentally, will bear the Holiday Inn logo. "We want to give people a better experience on the Web," says Ottolenghi. "But it's also about building brand equity." WM

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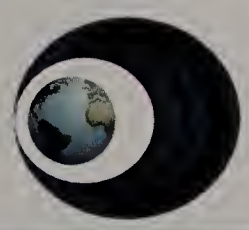

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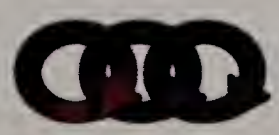

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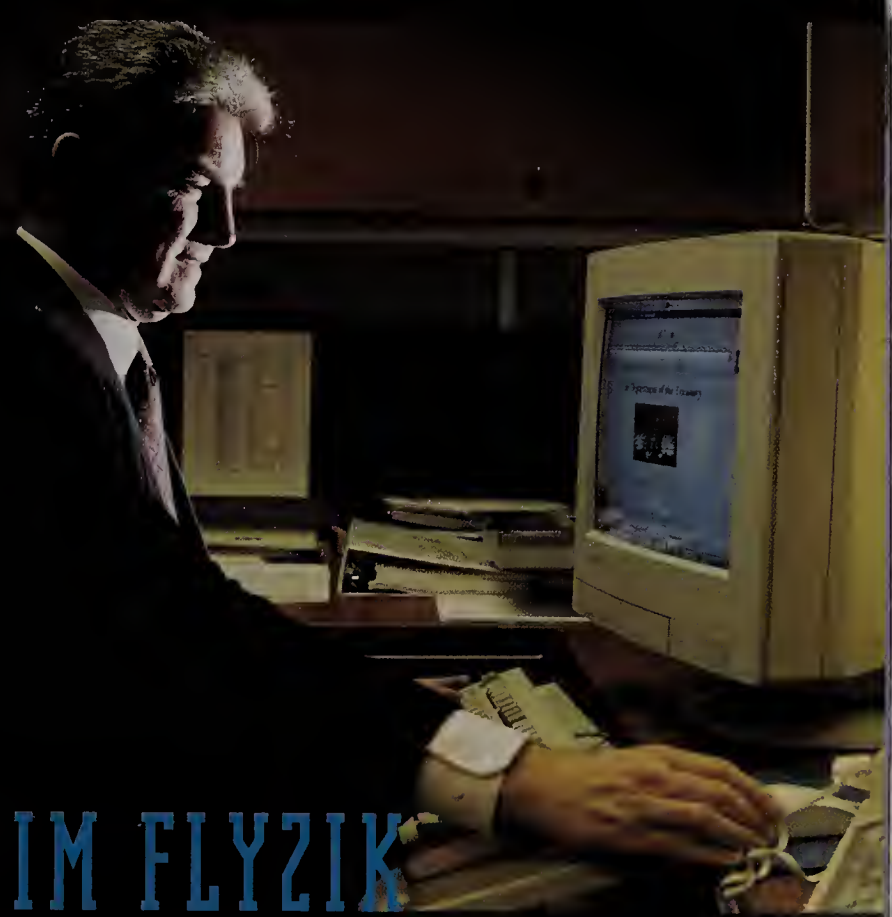
Long ac

of being remote and bureaucratic, government agencies are using the Internet to get up closer and somewhat more personal with their constituencies

BY PETER FABRIS



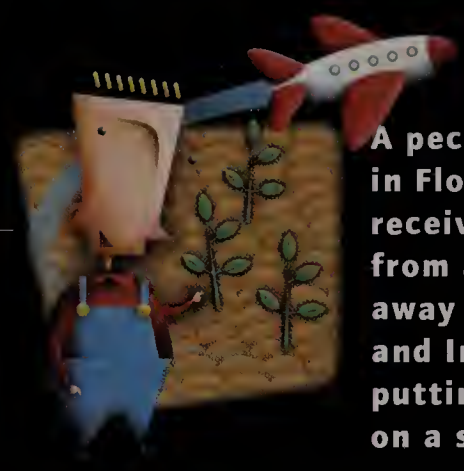
JIM FLYZIK

The Web is a way to introduce a one-stop-shopping model to government.

Inventing the Cyberstate

Some nascent Internet efforts provide a glimpse of the online government of the future:

Apartment dwellers in Santa Monica, Calif., check the city's online rent-control database to make sure their landlords are not overcharging them.



A pecan grower in Florida receives orders from as far away as Mexico and India after putting a page on a state government-sponsored Web site.

U.S. Treasury Department and head of the Clinton administration's reinventing government technology group. Information technology in general, and the Internet in particular, will play a major role in easing those burdens by enabling intragovernmental cooperation and improving citizen access to information and services, Flyzik believes. "The Internet gives us a level of connectivity that we haven't had in the past."

On the citizen-access front, for example, Flyzik sees the Web as a way to introduce the one-stop-shopping model to government, a development that should please anyone who regularly uses multiple public services. Toward that end, he envisions a "Virtual Department of Entitlements," a Web site where people who receive benefits from more than one program—and many do—could interact with the Social Security Administration, Medicare and others from a single home page. Such a model could also streamline the process of administering benefits, one of the first tasks destined to flow toward the newly "empowered" states.

The Web will link not only citizens with government but also government agencies with one another—and with the private organizations that increasingly share their roles. The U.S. State Department, for example, might decide to outsource passport issuance to a private company that would retain a percentage of the fees. (The same model could apply to the issuance of driver's licenses and alcohol permits at the state and local levels.) In this scenario, the Web would serve as a communications and data link between the State Department and the outsourcer, allowing them to share information on the number of passports issued and the amount of revenue generated, all without the trouble and expense of constructing a private network.

Such grand designs—and enthusiastic designers—are not limited to the federal level. "The Florida Communities Network has the potential to shift national, state and local government services away from the confines of public buildings to the doorsteps of the taxpayers," the executive summary on Florida's most prominent Web site boldly proclaims. That optimism is echoed by Florida's Secretary of the Department of Management Services, William Lindner, who says that the Web "will fundamentally change the relationship of government with citizens." His vision of what government can do on the Web grows almost daily: The state's current offerings include government job postings (private-sector listings are coming), contract announcements, and information on tourism and economic development.

Lindner also sees an opportunity for saving a good deal of money. The vision presented on Florida's home page translates into cost reductions in construction, maintenance and utilities as well as other expenses associated with traditional brick-and-mortar government. No one expects the Web to swallow up all government buildings, of course; still, the potential for significant savings in capital and personnel spending is obvious.

But not all government employees involved in Web efforts paint so rosy a picture. "I'm not convinced it will ever save money," says Keith Kurtz, project manager of the public electronic network in Santa Monica, Calif. "I used to be in the aerospace industry, and we thought CAD [computer-aided design] would save money. It never did, although it did produce better designs."

Kurtz admits, however, that although the Web may not have a significant impact on the city's annual budget, it will make interacting with city hall a more tolerable experience. And that, he says, is the technology's main benefit: Citizens can find information with a few mouse clicks, avoiding the waiting-in-line-to-find-out-which-line-to-stand-in syndrome and the ring-around-the-rosy phone shuffle. It will also mean fewer car trips to city hall, "a big issue in the Los Angeles basin," Kurtz says.

Besides lowering public stress levels, the Web can make life easier for harried government workers, who will have to bear fewer interruptions from phone inquiries. Using e-mail—and no Web site should be without it—citizens can query agencies directly when they can't track down an answer on-site. (Of course, in order for this tactic to work, governments must take a page from the corporate notebook and dedicate adequate staff to read e-mail and respond quickly.) Additionally, e-mail capability provides 24-hour, 365-day citizen access, giving those who can't make it to the state capital or city hall between 8 a.m. and 4 p.m. Monday through Friday an avenue to interact with state and local boards.

Round-the-clock citizen access is particularly desirable in large states with widely dispersed populations. But residents of rural areas, who arguably need Internet access more than

ILLUSTRATIONS BY CHRIS LENSCH

The U.S. Internal Revenue Service and Labor and Treasury departments pilot a one-stop wage- and tax-reporting system for businesses.

Small businesses in Texas search a comprehensive listing of state government procurement needs.

South Dakotan outdoor enthusiasts apply for fish and game licenses over the Net.

anybody else, can't enjoy the fruits of virtual government unless they are wired for speedy data transfer. Unfortunately, access to fiber-optic or ISDN lines will likely come later to these dispersed consumers of government services than to major population centers.

In Utah, for example, 90 percent of the population lives within 85 miles of the Wasatch Valley—a region that includes Salt Lake City and Provo—but many of the remaining 10 percent live in remote parts of the state. Recognizing its citizens' needs, Utah is doing what it can to make the Internet economically feasible for everyone. "The state's role is to leverage its buying power" to ensure that telecommunications providers will give remote customers service over high-speed lines at reasonable cost, according to Utah's information technology coordinator, Gordon Peterson. Meanwhile, cable television providers are looking to add inexpensive Internet services, which should sp

But lack of high-speed lin

BY EMPLOYEES FOR EMPLOYEES

Florida's intranet turns the Web into a reengineering tool

In addition to reaching out to Floridians, tourists and businesses over the Web, the Sunshine State's Department of Management Services is also developing an extensive intranet program for its own operations. Each of the department's 10 divisions has a separate home page—accessible only to employees—which the department's secretary, William Lindner, is counting on to streamline daily tasks. "[The Web] has great potential as a reengineering tool," he says.

Mirroring developments in the corporate world, the department's human resources organization is one of the first to exploit the new technology. "Our goal is to give every [one of our almost 2,000 employees] his own home page," Lindner says. "It becomes their employment record," letting them easily track information such as benefits and vacation balances. The department is also developing a Web-based component for keeping tabs on manpower and productivity.

Creating a Web interface to existing employee databases can reap unexpected dividends, too. For example, by using a keyword search, Lindner was able to identify some in-house photographic talent to contribute to the department's newsletters. The department is also working on a Web-based internal procurement system that will enable various state agencies to combine their purchasing power in order to negotiate better deals with suppliers.

Lindner's Web group is also taking some of the applications it has devised for the state's external Web and tweaking them for internal use. For example, it deployed a public site with updates on pending legislation, including hot links from each bill to the statute section it addresses. This turned out to be such an efficient tool for legislative researchers that the department built a similar internal application to facilitate the tracking of bills relevant to its own operations. The department's researcher uses e-mail lists to update interested managers about potential changes (new procurement restrictions, for example) so that they can lobby legislators.

Lindner's staff developed the legislative update page in just two weeks, an impressive feat considering government's reputation for moving as slow as molasses in January. But one of the Web's most attractive features is that it accommodates the rapid deployment of new functions. "These projects can be done in a matter of days [on the Web]," Lindner says.

With such obvious advantages, Lindner expects his group's Web forays will not be contained within the department for long. "Other state agencies will copy and build on what we've done," he says. *–P. Fabris*

KEITH KURTZ

The Web may not have a significant impact on Santa Monica's budget. But it will make interacting with city hall more tolerable.

faces. In order to provide Net access to citizens without home PCs, the state is deploying kiosks connected to its Web site in a number of public places. Currently, only about eight people a day register for the state's job search services at the first of these kiosks, installed at a busy Salt Lake City mall. As the public becomes more familiar with the Internet, however, Utah officials expect such usage to rise. The state also wants to extend fiber-optic lines to libraries and schools, providing more avenues for public access.

The evolution of government Web sites parallels that of corporate sites: an initial flurry of information, with a blizzard of services and transaction capabilities predicted for the not-too-distant future. To date, the majority of government sites provide basic information—descriptions of agencies, their phone numbers, news releases, meeting schedules, legislative updates and the like—and the graphics are usually rudimentary. Now, however, governments are starting to look at more service-oriented applications. Particularly promising are those using online forms that enable citizens to apply for business licenses, file fair-housing complaints and perform many other interactive functions over the Web.

A few forward-thinking government webmasters are also planning for the day, probably in a year or two, when agencies will take credit card payments over the Internet. The main issue, of course, is security. The city of Santa Monica already accepts online payments for annual business license renewals, but it has sidestepped the Web to do so. Users who choose this route (and few have) transmit their card numbers via a local government BBS connection—a more secure system, according to Kurtz. About 400 businesses per year submit some kind of form to the city electronically, and the majority of these documents travel over the Web. But any associated payments still travel snail mail.

Although connecting a Web site with databases can be a tricky proposition (see "The Sweet Smell of Access," Page 28), the opportunities for providing easy access to information—and possibly raising a little revenue in the process—make such applications highly desirable. Florida is working on a Web application that will allow citizens to check a database for complaints about professional license holders, to find out, say, if a building contractor has been cited in the past (that information was previously available only over the phone). And the city of Phoenix's police department is considering selling automobile accident reports to insurance companies over the Net and charging a minimal $2 premium over the $5 paper report fee. "We know insurance companies pay couriers $15 an hour to go around and pick up accident reports," says Greg Binder, project manager of the city's Electronic Community Access initiative. Online reports could raise money for the city while lowering costs for insurance companies, although courier services may not be too thrilled.

Like private-sector companies, governments use the Web heavily for marketing, particularly for business recruitment and tourism. Thinking of opening a manufacturing plant in Florida? Check out the Locating Your Business in Florida page for the low-down on new-business tax incentives, as well as economic statistics, demographics and information on utilities. Planning a trip to Badlands National Park and the Black Hills of South Dakota? First visit the state's Department of Tourism site: It'll tell you where to find Wall Drug Store Inc. (and why it's worth finding) and provide maps and descriptions of such attractions as Custer State Park and the casinos of Deadwood.

A few states go even further, offering business services online to foster economic growth. The state of Texas, for example, is using the Internet to support its many manufacturing firms—particularly the small ones—that have been hard hit by defense downsizing and global competition. "It's not necessarily the primary contractors [such as Lockheed Corp. and General Electric] that get hurt the most," says Abbe O'Rourke, technical support specialist for Texas-One, a Web site that serves the manufacturing sector.

Developed and maintained by the state's Department of Commerce (with some federal funding), Texas-One links

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from the department's Texas Economic Development Page. It provides a network through which businesses can identify new markets and strategic partners, locate suppliers and technology, access government resources, monitor customer needs and track competitors' movements. Among the most useful offerings on the site are listings of government and private procurement needs.

"Doing business with the state has been very difficult for small businesses because every agency does business differently," says O'Rourke. "We provide one place to find leads when previously there was no single source." Available around the clock, Texas-One is especially important to businesspeople who spend their days overseeing operations and must research new opportunities after-hours, when the non-virtual world has closed its doors.

Texas-One was launched nearly two years ago; since last October, users have been required to register online for the free service. The Commerce Department needs that information to determine who is using it, O'Rourke says, and to ensure that the small businesses that are its target audience are being served. In that respect, the demographics of the more than 2,000 registered users so far have been gratifying. "We know [users] are not just students noodling around," says O'Rourke. "They are businesses."

In addition to requiring that users register, the department is soliciting customer input through surveys and e-mail feedback and then using that information to further fine-tune the service. For example, they found that "businesspeople are not interested in raw data," says O'Rourke. Instead, they want information that is readily comprehensible and applicable to their individual situations. So the department has implemented a keyword search capability that will allow a dry cleaner, say, to find out easily whether he needs a state air-quality permit to do business. Such capabilities make Texas-One much more valuable than volumes of state regulations published on a gopher site.

The level of technical and graphical sophistication of government Web sites is as varied as the United States' topography and climate. With two half-time graphic designers dedicated to the Florida Community Network, the state places a high priority on appearance, and it shows. Tourism and business recruitment are the network's chief goals, and Lindner says Florida needs an attractive site to draw Web surfers who have grown accustomed to flashy commercial offerings.

But Florida's graphical standards—which Lindner's staff created after two weeks of online research—are atypical of existing government Web projects. Nebraska, for instance, doesn't impose common standards on its Web sites. Instead, webmasters from the various state agencies have formed a user group to exchange ideas about design and technical issues, although that group may eventually provide some informal standardization as well.

The distribution of responsibilities also varies from locale to locale. Commonly, states' IS departments provide technical support to individual agencies that are responsible for the content and design of their own sites. There are exceptions, of

FINDING IT ONLINE

Florida Communities Network
http://FCN.state.fl.us

Locating Your Business in Florida
http://www.state.fl.us/commerce/public_html/html/locatefl/tofl.html

Nebraska Online
http://www.nol.org/

City of Phoenix (Phoenix at Your Fingertips)
http://www.ci.phoenix.az.us

Pueblo (Colo.) Online
http://www.usa.net/pueblo/

City of Santa Monica, Calif.
http://pen.ci.santa-monica.ca.us/pen

South Dakota Department of Tourism
http://www.state.sd.us./state/executive/tourism/tourism.html

State of Texas
http://www.texas.gov/

Texas Economic Development Page
http://www.tdoc.state.tx.us

Texas-One
http://www.texas-one.org/

U.S. Department of the Treasury
http://www.ustreas.gov/

State of Utah
http://www.state.ut.us

ILLUSTRATION BY CHRIS LENSCH

PHOTO BY JEFFREY CAMP

WILLIAM LINDNER

The Web "will fundamentally change the relationship of government with citizens."

[illegible] mission is in charg[illegible] state's official home page, a logical arrangement because the commission has several years' experience running a statewide information network accessed through PCs in local libraries. When Nebraska decided to put up a home page, "the consensus was that the library commission should own it," says Steven L. Henderson, the state's data processing division administrator. "They'd been into the game and knew a little more about delivering information to outside customers."

The library commission contracts out its Web-site hosting and technical services and provides guidance and advice to agency webmasters. "Some agencies have chosen to establish and maintain their own Web sites," says Rod Wagner, the commission's director. "That's terrific. We point to those."

Funding, too, varies tremendously, depending on a project's goals and underlying political support. But even ambitious Web efforts are relatively inexpensive. Florida, for example, budgeted $2 million to launch the [illegible]ities Network, but Lindner expects to spend less than half of that.

When a government agency develops its own site, the major expense beyond the initial investment in software and hardware (and machines on hand are sometimes appropriated as hosts) is generally for personnel. Most projects evolve internally, using existing employees, often augmented by college interns. "It costs no additional tax dollars to run," says Jerry Carleo, director of information systems for Colorado's Pueblo County. "That's something I'm impassioned about."

It's something taxpayers, bureaucrats and lawmakers can get impassioned about as well. True, the Web's ability to deliver any and all services to citizens lies in the future. But from a political and economic perspective, the time for a wired government is now. WM

Peter Fabris can be reached at pfabris@cio.com.

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*Source: IDC, November 1995.

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- Education
- Market research
- News
- Professional/financial information
- Academic/scientific research
- Competitive analysis/intelligence
- Customer service

*Source: CIO Web/Internet Survey, December 1995.

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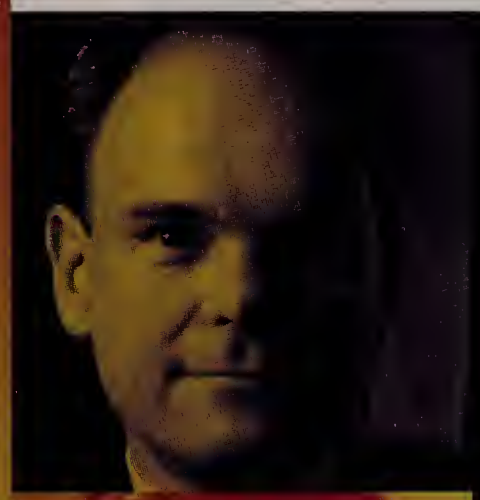

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lessons from...

SILICON VALLEY

IMAGE BY JOHN LUND

California's high-tech companies had many of the first—and the finest—commercial sites on the Web. While other industries have since achieved comparable Net sophistication, the pioneers' experiences are still instructive.

BY ANNE STUART

When Intel Corp.'s external Web site made its debut, it looked just terrific. Among the highlights: a prominent, highly detailed home-page graphic depicting Intel's pride and joy—its computer microprocessor.

There were just two problems. First, recalls Online Marketing Manager John Raftrey, it didn't really say "Intel." "It looked great, but it didn't tie into the look and feel of our ads or our TV commercials." And that great big beautiful home-page graphic? "It was too big and took too long to download," Raftrey says. Today, Intel has cashed in that giant chip in favor of smaller graphics with softer edges and fewer colors, including one mirroring the distinctive green 3-D circuit board that the company uses in its television ads. Similar icons appear throughout the site.

Like the 18th-century explorers who claimed their region, Intel and other California-based high-tech companies, such as Hewlett-Packard Co., Silicon Graphics Inc., Oracle Corp., and Sun Microsystems Inc.,

were among the first to venture onto the World Wide Web. In mapping this uncharted territory, they stumbled, started over, stumbled again, started over again—and, like their ancestors, established the culture for a new territory's colonization. "[Management guru] Tom Peters says you have to make your mistakes early and fast," says Larry Chase, who reviews sites in his *Web Digest for Marketers* electronic newsletter. "That's what these people did."

There are, of course, non-high-tech companies—such as Schlumberger Ltd.— and non-Silicon Valley companies—such as IBM Corp. and Digital Equipment Corp.—that were early and effective on the Net. But, not surprisingly, the largest single mass of Web pioneers hails from the high-tech world in general and from Silicon Valley in particular (see related story, Page 59). Rich in brainpower, entrepreneurial spirit and economic health, Silicon Valley provided the setting for such historic—in Web terms, anyway—events as the release of the phenomenally successful browser from Netscape Communications Corp. and the development of the Yahoo! search engine by a couple of ex-Stanford University graduate students. Silicon Valley was also the site of ambitious efforts by Digital's Internet Business Group to put California's 1994 election results online, turn a tiny Silicon Valley bookstore into a global business and create a virtual city hall for Palo Alto (see "Digital Rewired," *WebMaster*, June/July 1995).

By the time other industries began thinking about opening cyberspace storefronts, many Silicon Valley companies had, in effect, already erected entire cities, running thousands of pages on hundreds of servers, increasing the ranks of their Web teams and continually tinkering with technologies as varied as firewalls and virtual reality. They had also mastered the Web as a marketing tool: Last fall, for example, Sybase Inc. broadcast the launch event of its System 11 database products live over the Internet using Progressive Networks' RealAudio Player. Today, many of these companies—especially Sun—are moving aggressively into a new wilderness: the "intranet," as internal Web sites are popularly known.

Of course, the Silicon Valley businesses have a twofold advantage when it comes to exploiting the Net. First, they have invented or popularized many of the technologies that make Web commerce so attractive in the first place. And second, the software companies sell one of the very few products actually deliverable over wires. So while the rest of the world is catching on to the Web as a marketing and customer-service vehicle, some Silicon Valley companies have been distributing their wares over the Net for some time. Many now let visitors "test-drive" products online or download demos or trial copies. Oracle broke ground a little less than a year ago when it began selling full-featured versions of its Workgroup/2000 products over the Net. Today, it conducts entire transactions—from order placement through delivery—online, even offering customers a free download of CyberCash Inc.'s Secure Inter-

Lesson

Lesson No. 1

Everyone can participate. Not everyone can lead.

As have others, Hewlett-Packard grappled with the tyranny of turf wars when setting up its Web site. "Along comes the Internet and everybody [in the company] wants to be involved in it. Everybody wants to own it. Everybody wants it to be their channel," says Randy Whiting, HP's electronic marketing and services manager. "Very early on, we said, 'IT is a critical partner, but the real issue is: Who owns the corporate interface?' That clearly is in corporate marketing." Whiting's team—which quickly grew to more than 20 members worldwide—includes specialists in the technical and marketing functions as well as representatives from communications, strategy, and R&D. "It's a new field, and it clearly blends multiple areas," he says.

Lesson No. 2

You don't have to flaunt it just because you've got it.

Some HP officials initially considered putting every scrap of corporate and product information online. But they quickly realized that "taking a data sheet you've printed and moving it over to the Web just doesn't work," says Whiting. Neither, he says, does reproducing a traditional annual report. Dense, static text without links doesn't delight customers and potential customers; it drives them away.

The bigger lesson, Whiting says, is that breaking ground requires breaking out of old mind-sets. "The print paradigm is

of the Valley

so strong, it creeps into everything we do," Whiting says. "We unconsciously apply the structures and restrictions of printing to the Web even today." A sign on the wall in his group's shared space emphasizes the need for vigilance, warning, "Beware the tyranny of the printed page."

Lesson No. 3

Reflect your company *and* your audience.

Initially, the organization of Intel's external site mirrored the organization of the company, partitioned into divisions and departments. In its next incarnation, the site will reflect its audience's orientation rather than mimic the corporate structure. "Intel looks at the world a certain way, but the world doesn't necessarily look at Intel that way," Raftrey says. "You don't want to organize your Web site the way your organizational chart is structured; you want to organize your Web site the way the market is structured."

Lesson No. 4

When in doubt, please some of the people all of the time.

Most people (including those at Intel) will tell you that download speed rates higher than image quality when you're designing a Web site. But Silicon Graphics, which makes visual computing systems, opted to ignore that assumption.

"We made a conscious decision to keep it rich with graphics because a text-heavy site wouldn't be of interest to our customers," says Anita Schiller, electronic marketing director. That decision drew complaints from some visitors with slower connections, and Silicon Graphics yielded by substituting simpler, less exciting images. But, Schiller says, immediate negative feedback to that response prompted them to reinstate the original graphics within days. "Our current response is, 'We're sorry you can't appreciate it, but the core part of our audience is Silicon Graphics users, and the vast majority of them have the ability to experience the graphics,'" Schiller says. "You can't please everyone. So you have to decide who's in your audience that you care about more."

Lesson No. 5

Expect the unexpected and be ready to respond to it.

Silicon Graphics' "Silicon Surf" site began as a customer service vehicle, but it was quickly expanded to meet the demand for marketing material. And, like other early adopters, the company found that by building a virtual road to your door you may attract far more traffic than you ever anticipated.

One Friday night in 1995, Silicon Graphics announced an online competition offering prizes to those who—in 30 words or less—best described how they would use one of the company's tools to improve the Internet. "We checked it after an hour. We had received seven submissions from five countries," says John McCrea, the company's Web Force marketing manager. Within five weeks, there were 5,000 entries, and employees had to scramble to read them all and pick a winner.

The contest left SGI's Web team with a gratifying, if somewhat unnerving, glimpse of their own power. More important, it provided a priceless global snapshot of their audience.

Lesson No. 6

Creativity is good. So is consistency.

The many global giants among the high-tech pioneers realized early on that they risked fragmenting their corporate images through home pages erected independently by widely scattered business units. That was the case at IBM (which, while based on the East Coast, maintains a Silicon Valley presence). Nobody at Big Blue wanted to impose central control over all the company's home pages and risk stifling the inventiveness that the Web project had unleashed. But "while there's room for creativity, we wanted to have a common look and feel," says John Patrick, vice president for Internet strategy. To that end, IBM created a "cookbook" template, providing a standard banner and other elements for all IBM pages, which also link back to the company's main site.

Lesson No. 7

Don't let down your guard. Not for a nanosecond.

"People on the Web are not really forgiving. They expect a lot," says Laurent Pacalin, Oracle's senior director of worldwide electronic distribution. Says SGI's Schiller: "It really is a living organism, and you've got to keep feeding it and caring for it."

IMAGE MANIPULATION BY JOHN LUND, http//www.imagesite.com/teamdigital; HISTORICAL IMAGE BY FPG INTERNATIONAL

Still the Ones?

Are Silicon Valley companies still the Young Turks of the Internet, or have they succumbed to middle-age flab?

With more than 100,000 homesteaders on the Web, are the Silicon Valley sites still out in front? Some Web-watchers think so: "The high-tech guys are still doing the most sophisticated stuff," says John C. McCarthy, a research director with Forrester Research Inc.

Others say Silicon Valley no longer rules. "There are a lot of other companies that have Web sites that are at least as interesting as anything you'll see in Silicon Valley," says Chris Leuchtenburg, director of computing strategy services at Forrester. His picks include Holiday Inns Inc., (See "Rooms with a View," Page 34), Walt Disney Co. and Wells Fargo & Co.

David Siegel, a design consultant who maintains the "High Five" Web awards rating site, says that at least in terms of graphics, most big high-tech companies seem like throwbacks to the Stone Age compared with some newcomers to the Web. Earlier this year, his honor roll included plenty of sites erected by major corporations—Polaroid Corp., FAO Schwarz and Kellogg Co. among them—but not a single big name from Silicon Valley.

Certainly, pioneers aren't immune to basic problems. Though the Web is still in its infancy, some high-tech sites have succumbed to middle-age complacency, stuffed with too much information and suffering from broken links, silly typos and poor organization. Others seem not to have learned the fundamental lessons of site creation, forcing visitors to wade through several screens to find basic information.

And then there's the edict to make oneself as easy to contact as possible. In January, Intel Corp.'s Web site directory of worldwide locations didn't include a street address or phone number for its Santa Clara headquarters. Neither did the "About Intel" section. Clicking on the copyright notice did yield a street address, but to get the telephone number, one visitor finally gave up and did it the old-fashioned way—by calling information on the telephone.

net Payment Service software to help allay their fears.

Whether the Silicon Valley companies will remain trailblazers as isolated applications give way to full-fledged electronic commerce is an open question. Oracle is one of only a few sites set up to allow direct online transactions, mostly because of continuing concerns about financial-data security. But "that's going to change over the next 18 months," predicts Jay M. "Marty" Tenenbaum, vice president of strategic technology at VeriFone Inc. and a founder of CommerceNet, an electronic-business consortium. "[Security] is the missing link."

This much is indisputable: In terms of timing and innovation, Silicon Valley's experiments, triumphs and failures offer valuable lessons for later generations of businesses staking claims in cyberspace. Some of what these companies learned so painfully seems painfully obvious now: don't wait to start; don't start without a clear business plan; double your budget; content is king —go for quality and quantity. But as the Web approaches its next wave, newcomers should consider looking West for the wisdom that comes with experience. WM

Anne Stuart can be reached at astuart@cio.com.

IMAGE BY JOHN LUND

California Dreaming

Silicon Valley is more than a state of mind

You won't find Silicon Valley on most maps. Like the Web itself, it's a real community and yet, strictly speaking, it isn't a real place.

Formally known as the Santa Clara Valley, the high-tech haven stretches roughly from San Francisco south to Santa Cruz. If Silicon Valley has a heart, it's Palo Alto, home of Stanford University.

Once dotted with fruit orchards, the area began its evolution into a techno-mecca in 1937, when Stanford graduate students William Hewlett and David Packard started their electronics empire in a Palo Alto garage. Over the next three decades, other entrepreneurs followed suit. Silicon Valley earned its modern nickname in the 1970s, as manufacturers of semiconductor chips clustered on the landscape.

Today, the area is home to dozens of high-tech employers—including a third of the industry's largest and fastest-growing domestic companies—employing hundreds of thousands of people. Most recently, an army of Internet-related businesses has invaded the valley, again altering the economic terrain.

To outsiders, there's something different about the way things work here. In what author Annalee Saxenian calls "the paradox of Silicon Valley," its collective corporate culture uniquely blends fierce rivalry and collaborative camaraderie. "Companies compete intensely while at the same time learning from one another about changing markets and technologies," Saxenian writes in *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Harvard University Press, 1994).

As the region has moved into cyberspace, so has its contradictory nature. Silicon Valley companies fight to be first with the Web's latest technology, coolest graphics, most creative content and best service offerings. Many cheerfully admit to relentlessly monitoring competitors' sites and responding quickly to changes, sending regular ripples of innovation across the Web.

At the same time, Silicon Valley companies have joined forces in mutually beneficial ventures. For instance, many were founding members of Menlo Park-based CommerceNet, a consortium working to establish standards for electronic commerce.

The area also boasts at least two regional Web sites. Smart Valley Inc. includes links to industry and local business projects, programs, alliances and organizations. NetView Communications' Silicon Valley Gateway links not only to the area's top employers but also to sites devoted to dinner spots and disaster information.

In the long run, of course, the Web could render the distinctive region irrelevant. As the business community becomes more virtual, companies' real-world locations matter less. To paraphrase that now-famous *New Yorker* cartoon: "On the Internet, nobody knows you're from Silicon Valley."

—*A. Stuart*

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CommerceNet
http://www.commerce.net

Digital Equipment Corp.
http://www.digital.com

Forrester Research Inc.
http://www.forrester.com

Hewlett-Packard Co.
http://www.hp.com/

High Five
http://www.highfive.com/

Holiday Inns Inc.
http://www.holiday-inn.com/

IBM Corp.
http://www.ibm.com/ http:/

Intel Corp.
http://www.intel.com/

Netscape Communications Corp.
http://www.netscape.com

Oracle Corp.
http://www.oracle.com

RealAudio Player (Progressive Networks)
http://www.realaudio.com

David Siegel
http://www.dsiegel.com

Silicon Graphics Inc.
http://www.sgi.com

Silicon Valley Gateway (NetView Communications)
http://www.netview.com/svg

Smart Valley Inc.
http://www.svi.org

Sun Microsystems Inc.
http://www.sun.com/

Sybase Inc.
http://www.sybase.com

VeriFone Inc./EIT
http://www.verifone.com
http://www.eit.com

Walt Disney Co.
http://www.disney.com/

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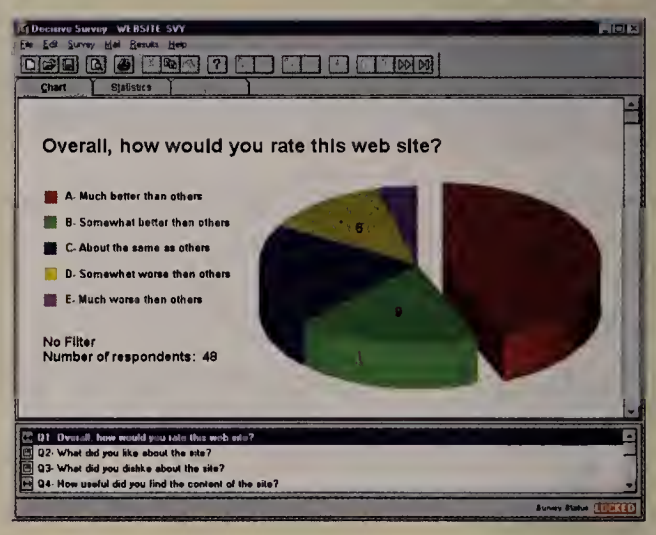
Tracking Attention

Darn those pesky CEOs. You'd think just having a Web site would be enough to make them happy. But nooooo, they also have to know how that site is performing and whether it's justifying the investment.

Fortunately, a number of new players are flocking to the traffic-measurement tools marketplace pioneered by the venerable (i.e., more than nine months old) Internet Profiles Corp. For example, Intersé Corp.'s Market Focus is a software product (as opposed to Internet Profiles' I/Pro, which is a third-party service) that bills itself as the solution for companies involved in online marketing efforts. It analyzes standard log files to produce graphs, bar charts and tables that let you know how discrete parts of your site are faring and where your resources are best spent. Because counting hits is misleading (as we've all heard ad nauseam), Market Focus provides information on who your visitors are, where they come from and just what the heck they're up to. The product uses a database of U.S. Internet domain names indexed by city, state and ZIP code to translate Internet addresses into organizations. It also creates executive overviews and trend summaries, helping make the whole thing fathomable to those aforementioned demanding CEOs. Call 408 732-0932 or mosey on over to *http://www.interse.com.*

The Pollster Express

The key to success in these customer-driven times is knowing everything about everybody and knowing it really, really quickly. Decisive Technology Corp.'s new product, Decisive Survey, helps companies track the demands, dissatisfactions and collective mood swings of their various constituencies by polling them online.



Decisive Survey lets users develop a survey in minutes and dash it off to those customers, suppliers or employees who can access e-mail over the Internet or other networks. It includes more than a dozen ready-to-go customizable surveys covering such routine stuff as customer satisfaction and human-resources issues. Pollsters can also draw from a library of standard questions or make up their own ("If Ulysses S. Grant were alive today, do you think he would like our product?").

Users create distribution lists by clicking on names in an e-mail address book, importing addresses from a file or entering them manually. Depending on how much money they want to spend, companies can poll 100, 1,000, 5,000 or 10,000 people at a time. And when those responses start pouring in, Decisive Survey makes analysis easier by representing them graphically. For information, call 800 987-9995. A free trial survey for 10 respondents can be downloaded from the company's Web site at *http://www.decisive.com.*

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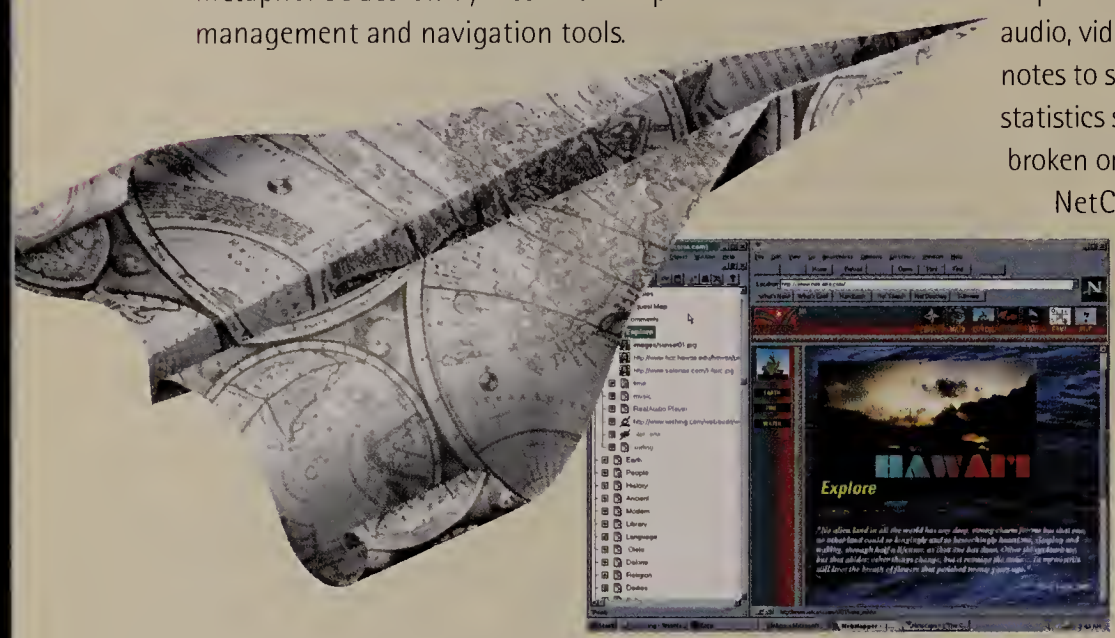
Mapping Into Resources

If you have any doubts about the growing seriousness of the Web, just follow the shifting metaphors. While early users indulged in carefree "surfing," the business types now coming online are looking for the shortest route to a predefined destination. For them, the operative word is "mapping," a metaphor seized on by NetCarta Corp. with its new Web-site management and navigation tools.



NetCarta describes mapping—or "cyberspace cartography," if you want to get fancy about it—as a boon to both webmasters managing sites and visitors searching for specific information. Using the company's WebMapper product, site managers can create data files NetCarta calls WebMaps, which clarify relationships among various objects (HTML pages, links, graphics and audio, video and program files, for example). They can also attach notes to specific objects (in effect, footnoting them), quickly find statistics such as modification dates and file sizes, and check for broken or phantom links.

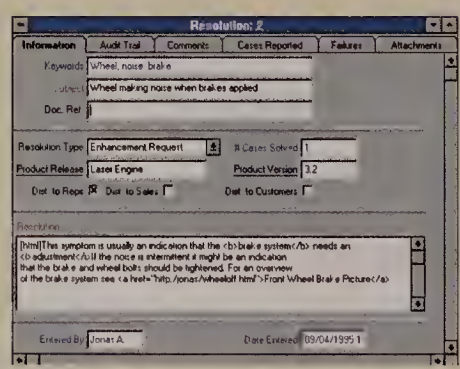
NetCarta's CyberPilot (which the company considers a "browser accelerator") lets users view WebMaps and instantly see all links, text, graphics and multimedia files on one screen—in effect, a visual table of contents. For information, call 408 461-8920 or find them on the Web at *http://www.netcarta.com.*

Something Old, Something New

The sand is everywhere as heads fly out of it. IT companies that never mentioned the Internet a year ago are suddenly claiming it as an integral part of their strategies and figuring out ways to leverage its flexibility and universal reach against their own established product lines.

One company that caught on fairly early is The Vantive Corp., a leading supplier of customer-interaction software. The company's VanWeb tool enables users to access information from its Vantive Enterprise suite—which includes sales, marketing, customer-support, help-desk and other applications—over the Web.

VanWeb users can update data, drill down for more detail, link information together and set up and perform complex queries through normal hypertext linking and relational-database navigation. The model suggests both internal and external applications: everything from registering for a seminar to updating personnel lists to requesting product literature.



The product includes Vantive Web Agent, which allows browsers to navigate within Vantive Enterprise, and Vantive Web Publisher, which lets designers define forms, user groups, workflow rules and more. For information, call 800 582-6848 or do the Web thing at *http://www. vantive.com.*

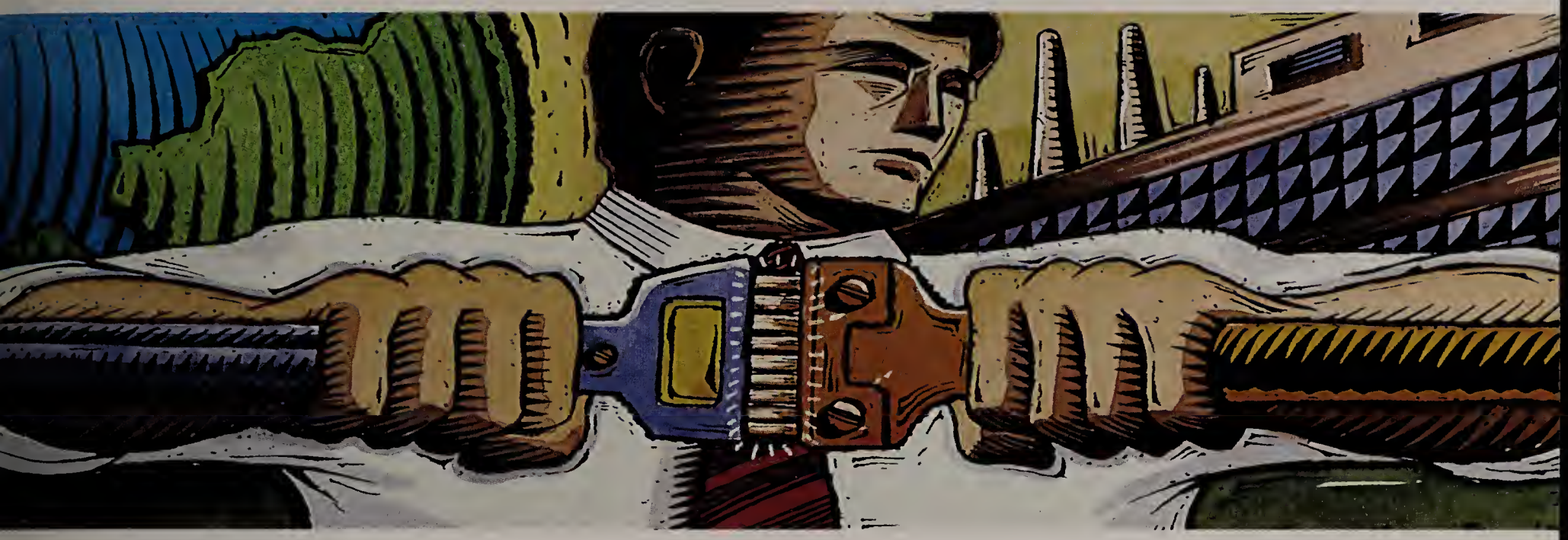
Continued on Page 62

A Reason to Object

Iband Inc.'s Backstage gets points right off the bat for not incorporating the words "web," "spider," "surf" or "net" anywhere in its name. This object-oriented development environment is aimed at builders of external Web sites, especially those offering customer-service applications. Toward that end, Backstage can build Web pages on the fly, so that visitors entering a site receive information optimized for their browsers.

Because it is a visual environment, Backstage promises to let Web developers do some pretty sophisticated things pretty easily. Users can build database applications, which are critical for customer-service, by inserting and configuring objects as they author pages. They can also create threaded discussion groups (public or private) and automated e-mail applications that use form data to fill in templates and then forward completed messages. Other objects include log-in and authentication, tip of the day and page-hit count. A project-level management system provides account administration and remote editing capability from any PC with Internet access. For information, call 408 374-4086 or point your browser toward *http://www.iband.com.*

Introducing Sapphire/Web.



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Sapphire/Web

- **Visual: its easy-to-use approach is simple enough for novices, yet powerful enough for large project development teams.**
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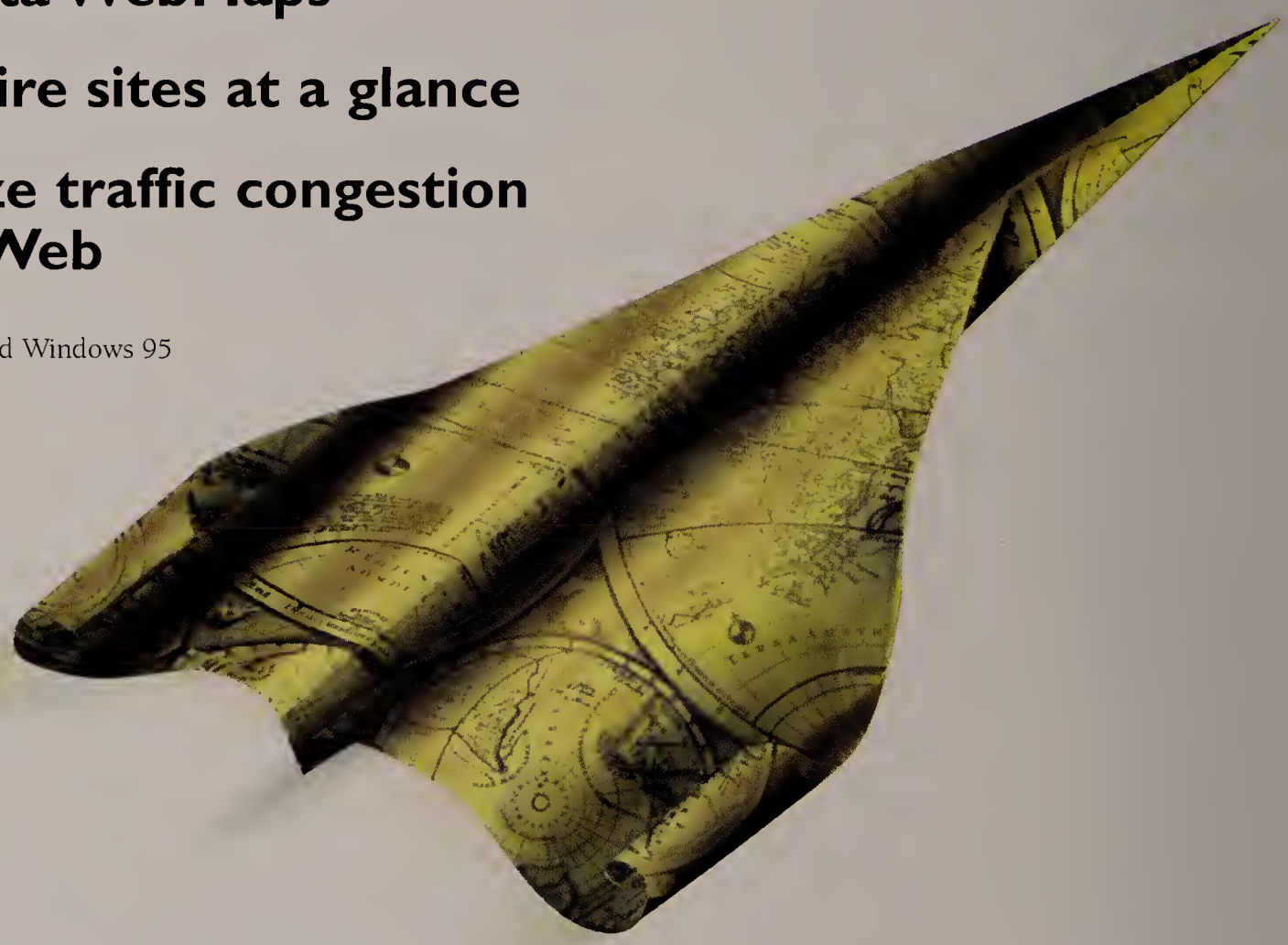

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